

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

MARCH 1949

REO TO THE RESCUE

It isn't news when a truck driver—"gentleman of the highway"—stops to lend a helping hand to a motorist. It happens every day—flat tires, cars stuck in mud, or drivers just plain lost like the befuddled young man pictured here.

It's easy to get "lost" in the maze of new truck claims and counter-claims, too. One way out—get the *facts* from your Reo dealer about Reo's More-Load design, maneuverability, performance, maintenance costs, long life. Then, *you name the test . . .* find out how Reo can top the best performance of any truck you now own! Reo trucks range from 8,000 to 76,000 pounds G.V.W.

REO MOTORS, INC., LANSING 20, MICHIGAN

REO





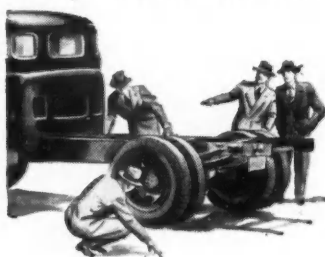
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From 248 basic chassis models, your Dodge dealer will recommend a "Job-Rated" truck that will fit *all* of your overland hauling requirements.

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Three Products In One Package.

Nothing Else To Buy.

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- Ingredients in lower compartment seal leaks . . .
- Also prevent reformation of rust.

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Needs no neutralizer or inhibitor.

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*Order Through Your Automotive
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COMMERCIAL CAR

Vol. LXXVII Philadelphia, March, 1949 No. 1

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CCJ Reader Digest



Link with Lab

Rio Grande Motorways tells how it uses laboratory facilities to analyze its parts failures. Actual reports of the lab are reproduced in this article to show why various failures are attributed to fatigue and design problems, as well as operating and maintenance practices. Page 67.

Revitalized Maintenance

A sand and gravel fleet tells how, by installing modern shop equipment and revamping its maintenance routine it was able to greatly improve vehicle efficiency and reduce its maintenance costs as well. See page 74.

Super-Overhaul

One of a series of articles on Watson Bros. Co., this one goes into its overhaul procedures—on a factory perfect basis—that results in more than 100,000 miles between rebuilds. See page 78.

Lather Over Cleaners?

Harvey Earl of UPS gives out with the low down on the various types of cleaning compounds and their effect on finishes. There is also a four-point guide on what to expect from a cleaner. See page 86.

15-Minute Cost System

Calling all fleets who think they can't afford a cost system. That's what Archer Laundry thought until they devised a simple set-up that gives them all the facts and takes but 15 minutes a day. See page 71.

CHASSIS PARTS LAST LONGER

**... and maintenance costs go down when you use
the longer-lasting lubricant—Texaco Marfak**

TEXACO MARFAK is the world-famous chassis lubricant that protects chassis parts for a *thousand miles or more*. It resists squeeze-out, pound-out and wash-out—guards chassis parts against rust and wear, makes them last longer, assures smoother operation, keeps chassis maintenance costs consistently low.

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Reduce your fleet operating costs by using Texaco products and Lubrication Engineering Service. Call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N.Y.

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MORE THAN 300 MILLION POUNDS OF TEXACO MARFAK HAVE NOW BEEN SOLD!

Lubricants and Fuels

FOR THE TRUCKING INDUSTRY



Detroit Dispatch



by LEONARD WESTRATE

CCJ Detroit News Editor

Heavy-duty buyers' market results in new purchase plans; more light truck production.

Kaiser has new model for fleet use . . . Ford and Hudson stand pat on current designs

Lease-Purchase Plan

A new plan for financing purchase of new trucks and equipment is in the talk stage by at least one company. It would entail putting the equipment in the hands of the operator on a lease basis, with specified monthly payments until the purchase price plus finance charges has been met. All operating costs would be borne by the purchaser, but title to the equipment would remain in the hands of the seller until liquidation of the balance due. The big advantage to the buyer would be that it would provide a means of capital investment for needed equipment without straining his credit, because the deal would not appear on the books as a credit obligation. Manufacturers would benefit by being able to supply the operator with the proper equipment.

New Kaiser Traveler

Kaiser-Frazer is definitely going after fleet business with its new Kaiser Traveler model (photo on page 154). It is a utility car with conventional 4-door sedan appearance but special construction inside to provide cargo space. The rear seat folds down into the floor to give an 85 cu. ft. load area extending from the back of the

front seat to the rear trunk lid. The rear opens full height, with the upper section swinging upward from hinges at the top of the rear window and the lower section swinging downward and out to make an extended loading or carrying platform. Interior is trimmed in vinyl plastic and with seat in place, the car is identical in appearance to a conventional car. It is priced at \$2,088.48 at Willow Run, which is \$240 under the Kaiser Special and includes factory-installed accessories. K-F offers a fleet discount, providing a 3 per cent rebate on purchase of 10 or more vehicles in a 12-month period.

No Bigger Fords Now

Ford has definitely scotched a report that it will build a F-10 model truck. The company says it is interested only in volume production models, and the present 2½ and 3-ton models are as high as it plans to go. Production, incidentally was reduced several weeks ago on the large models because the initial rush of orders that accompanied introduction of the big job has subsided. Ford also has no plans at the present for production of a sedan delivery.

Heavy-Duty Doldrums

All manufacturers of heavy-duty trucks tell us that competition in that field really is rugged. Two of them that were planning model changes for early summer have delayed their plans. Sales managers report that buyers not only are driving hard discount bargains, but are demanding more in the way of special specifications and individual adaptations. Another complication is that a year ago when there was a war scare, many fleets bought frantically and some of these units are in storage still unused. Some dual dealers (cars and trucks) are known to have sold trucks at or below cost just got rid of them in recent months, further demoralizing the market.

Panel Pick-Up

The slump in the heavier truck market, and the more favorable outlook for steel will result in more light panels and pick-ups this year, truck manufacturers say. This market is generally strong. Capacity in the truck industry is far ahead of the prewar level, and it is generally believed that production this year will not come up to the all-time record of 1948, but still will be far greater than in 1941.

New Reo Engine Coming

Reo is getting ready to produce a new big truck engine. Completion of a loan to finance the project indicates that production is not far off. It is understood that Reo will build the engines for its own use and possibly for sale as commercial units.

Hudson Pick-up Delayed

It looks like a long wait for that Hudson pick-up truck that was expected to appear long before this. The company reports that nothing definite in the way of plans for it

(TURN TO PAGE 18, PLEASE)

7-Man Crew Body



The American Coach & Body Co. has a new line construction body with seven-man crew compartment. Known as model 5805 it replaces the familiar model 3714 and mounts on flat-faced cowl chassis. It is designed to take advantage of the wide hood and fenders lines of current truck chassis

New Private Carrier



This Fruehauf Aerovan is the first of a fleet for R. P. Scherer Corp., Detroit. It will be used to haul finished gelatin capsules from the Detroit plant to the New York area

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--Plus **EFFECTIVE ICE CONTROL**

AUTOMATIC SAND SPREADER

Has a capacity of 10 tons of sand, or equivalent in cinders, gravel, salt, calcium chloride or other mixtures. Completely automatic, controlled by one operator in cab. Eliminates slow, expensive, dangerous hand shoveling. Spreads at full truck speeds, to any desired widths and for greater distances.

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RIGHT SPEED WING

Hydraulically controlled side wing disperses windrows at high speed, provides greater width of clearance—up to 16 ft. total.

ONE-WAY FRONT PLOW

Correctly designed to remove a greater volume of snow at high speeds, throwing the snow far off the road.

— and powered by **WALTER 4-Point Positive Drive**

Only with Walter Snow Fighters can you make the most effective use of this valuable auxiliary equipment. First, because you have the great power of 185-240 hp. engines; second, because you have 100% positive traction in all four driving wheels, to put every horsepower to work, without slipping, wheel-spinning or stalling on snow and ice. See your Walter distributor for full details on this outstanding Walter Snow Fighter-Spreader combination. Or, write us for further information.

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WALTER

4-POINT POSITIVE DRIVE

SNOW FIGHTERS



by **GENE HARDY**

CCJ Washington Correspondent

Washington Runaround

Why does Public Roads Commissioner oppose axle loads over 18,000 lb? . . . Are you up-to-date on Fair Labor Standards Act . . . ICC accident reports . . . Pricing case?

MacDonald Opposes Axle Loads Over 18,000 Lb.

Perhaps the most important news coming from Washington within recent weeks was the statement by Commissioner of Public Roads Thomas H. MacDonald, flatly opposing the authorization of axle loads in excess of 18,000 lb. Trucking industry sources in Washington attach great importance to this statement since it is only on rare occasions that Mr. MacDonald has so bluntly stated his views. These sources further point out that the statement will provide considerable ammunition for those interests pressing for higher taxes on trucking and even sharper limits on permissible weights.

Mr. MacDonald stated that "any revision of laws governing gross weights of vehicles should take the form recommended by the American Association of State

Highway Officials, which relates gross weight to the number and spacing of axles." AASHO has recommended the 18,000-lb limit.

To back up this statement, Mr. MacDonald pointed out that the chief destructive factor in regard to highways is overloading beyond the legal limits. He emphasized that in 1931 roads were more destroyed by climatic and soil conditions than they were by any use that was made of them. But since 1931, he pointed out, the volume of truck traffic has almost tripled. The total number of miles traveled by trucks on main roads has increased from 11.4 billion in 1931 to an estimated 34 billion this year. At the same time there has been a significant increase in the proportion of trucks that carry heavy loads.

Only about eight trucks in every thousand rolling over the highways in 1931

had axle loads of 18,000 lbs., and there were practically no axle loads in excess of 20,000 lbs., Commissioner MacDonald said. "In 1947," he continued, "76 trucks in every thousand had axle loads of 18,000 lbs. or more, 33 of which were 20,000 lbs. or more, and 14 were 22,000 lbs. or more."

"Axle loads of 28,900 lbs. have been found in Connecticut, 29,000 lbs. in Massachusetts, 26,000 lbs. in Ohio, 40,420 lbs. in New Jersey, 31,820 lbs. in New York, and 26,200 lbs. in Maryland."

"A main highway of average characteristics which in 1931 carried 5000 vehicles per day, including 780 trucks, in 1917 had a traffic of 9500 vehicles per day, including 1980 trucks. Daily the highway in 1947 was subjected to 137 axle loads of 18,000 lbs. or more, 65 of which were 20,000 lbs. or more, and 27 were 22,000 lbs. or more."

Commissioner MacDonald made it clear that he is not "up in arms" against the trucking industry as a whole. He believes truck transport is "of incalculable value" in the national economy, and thinks every effort should be made to develop it for the greatest benefit to the nation. He conceded that a majority of trucks now in use are not overloaded. He added, however, that "the claim of heavy truck operators that savings in operating cost are reflected in widespread public benefits hold true only to the extent that truck operations do not destroy capital investment in the highways and increase maintenance costs."

Administration vs. ICC

Current Administration proposals to broaden the coverage of the Fair Labor Standards Act to cover particularly all trucking employees, except drivers and helpers in over-the-road operations, have a rocky road to travel before enactment into law. The trucking industry is particularly opposed to the narrowing of the exemptions from the overtime provisions of the act. Nor is the ICC going to readily assent to relinquishing its jurisdiction over trucking employees whose work is connected with the safe operation of motor vehicles.

ICC Regs and Reports

A revised copy of the overall ICC motor carrier safety regulations should be completed and ready for public hearing early next month. . . . ICC spokesmen report gratifying response to the new accident report forms issued last December. The forms being submitted indicate that they are well understood. The information is more accurate and there is less omission than had previously been encountered. Insurance companies and state governments are discussing the possibility of adopting the new forms in order to assure uniform reporting procedures.

Senate Transport Study

The Senate Interstate and Foreign Commerce Committee will soon get underway an investigation of domestic land

(TURN TO PAGE 18, PLEASE)

**HERE'S THE TOOL BOX JACK
THAT'S GOT EVERYTHING**

WALKER

SERIES 900



- A CAP THAT CAN TAKE THE RAP
- A RAM WITH SOLID END TO PREVENT BENDING
- CUP LEATHERS THAT WEATHER 10,000 LBS. PRESSURE
- AN OIL TANK WITH EVEN THE AIR ENGINEERED
- A PENDULUM-BALANCED HANDLE SOCKET
- "RYTH-MATIC" VALVE ACTION THAT MAKES OPERATION EASY
- A BASE OK'D BY X-RAY
- PARTS THAT FIT WITH CAT WHISKER ACCURACY
- FILLED WITH HYDROYL-50...NON-CORROSIVE, HYDRAULIC JACK "OIL-ALLOY"

The Famous
Walker Series 900
Portable
Hydraulic Jacks
—from 3 to 50 tons
capacity

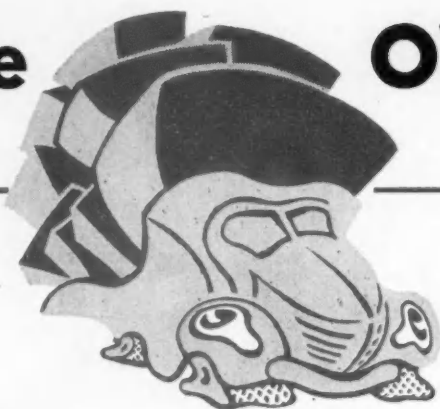
When you buy a Walker Series 900 portable hydraulic, you get more than "just a tool box jack." You get as fine a piece of lifting equipment as modern engineering and production can build. You get all the quality and refinement that a third of a century of *Know-How* can bring to a jack. Walker 900's do *what* you want done, *when* you want it done.

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN
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WALKER LEADS IN JACKS

The OVERLOAD



by George T. Hook

Editor

A Bad Break (But Good) for Front-Wheel Brakes

THE front-wheel brake test report has been issued and appears elsewhere in this issue. It is to the credit of the test committee that the conclusions are clearly and forthrightly stated. (There was some fear that the long delay in getting clearance of the report was due to the maneuvering of certain affected interests.)

On the basis of the tests on flat glare ice, only a person with murder in his heart or one having a complete disregard of facts would insist that western operators in mountainous areas were wrong in defying regulations by operating multi-axle vehicles and combinations without front-wheel brakes.

It must be remembered, too, that the tests were made on the flat on lake ice. Even on the flat, with plenty of skidding room, near-accidents occurred. If the absence of front-wheel brakes on combinations was beneficial on the flat think how much more beneficial their absence must be on icy, down-grade curves!

While the conclusions of the report were unqualified, one statement should make western operators apprehensive. It is the statement that the tests were "a preliminary or exploratory study, with the possibility that a more complete and comprehensive investigation could be undertaken at some future time."

Is this somebody's idea of a delaying tactic? Where is the committee going to get the martyrs to make a "complete and comprehensive" test which, presumably, would mean driving the very types of vehicles and over precisely the same routes under the same conditions that now inspire law-breaking. What, exactly, is the meaning of this conditional "possibility" and indefinite "future time"? Are facts to be ignored indefinitely because they apply to icy flats and not to icy downgrades and icy downgrade curves on the brink of canyons? Don't the conclusive "preliminary" findings warrant some interim action on the part of the I.C.C.?

Should Heroism or Safe Driving Be Emphasized?

LAST month in this corner we criticized the practice of giving Driver-of-the-Month awards for an act of heroism. We said, among other things, "Unless the heroic driver is also a safe driver with a record nearly as accident-free as other drivers nominated, he should not be named the Driver of the Month."

Should even this fair attitude be mistrusted by those who judge Driver-of-the-Month nominees? Does the recklessness in a man that impels him to risk his life for others show up sooner or later in his driving? These questions arise out of the experience of two West Coast operators, reported as the result of our comments.

These two operators campaign safety in big-league style. Each nominated two drivers for Driver-of-the-Month awards in their States. These drivers had performed acts of heroism and their driving records were good enough to merit their nomination in accordance with ATA rules. All four drivers were named Drivers of the Month by the judges.

All four drivers have recently been fired for violation of safe-driving rules. One can imagine the ribbing the Driver-of-the-Month award is receiving from drivers in these two operations, and in the diners where they chew the fat with other drivers.

These are unfortunate happenings but they are not an indictment of the Driver-of-the-Month idea—its purpose or the rules which govern it. But they should be a warn-

ing to judges and to operators to adhere more strictly to that section of the rules which stipulates that the nominee shall have an "outstanding accident-free driving record." If the judges are content with a "pretty good" or "fair" record in the case of a hero, they run the risk of setting up a situation that may prove embarrassing. Admittedly the percentage of disappointing winners may not be great. But if heroism is given more weight than a safe driving record, then even a trifling percentage of disappointments can be magnified to affect morale, which is a major ingredient of a safety campaign.

It may be argued that the advancement of safety is not the primary objective of the Driver-of-the-Month award; that the primary objective is improvement in the public attitude toward truck drivers. It must be conceded that this is a worthy objective. But the emphasis placed in the rules on an "outstanding accident-free driving record" ties up the award so definitely with safety that the primary concern of its sponsors, judges and of operators should be to avoid decisions that might jeopardize driver safety campaigns.

In this discussion we do not mean to reflect upon heroes. Their acts deserve to be rewarded. But we do support the view of many safety directors that an act of heroism, unaccompanied by an outstanding accident-free driving record, is not deserving of the Driver-of-the-Month award.



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DO THEM BETTER

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Now you can standardize on a single cable for all ignition rewiring . . . this one cable that meets every requirement of every vehicle in every climate.

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(*Miles Per Replacement)
IN PACKARD CABLE

Packard

REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio



FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

COMMERCIAL CAR JOURNAL, March, 1949

DETROIT DISPATCH

Continued from Page 6

are in the works right now. At one time, Hudson thought that it might go into production of larger trucks, up to 1½ tons, but that seems to be out now. Packard also talked about a large truck engine shortly after the war, but that appears to be dead also.

Nash Automatic Transmission

Nash has started tooling for production of an automatic transmission. H. C. Doss, general sales manager, told dealers in announcement meetings when showing the 1949 models that a transmission has been tested and approved and will be put into production after tooling is completed. It is understood that the automatic drive is not a torque converter but is a self-shifting device which is not like anything now currently being offered by other manufacturers.

Small Car Rumor

While all the talk about a smaller, lighter automobile is centered around activities of the Big Three, one of the independents has such a car in the works and actually has been testing it for more than two years. It is designed to be a "shopping car" with a small engine which would give gasoline

economy up to 45 mpg. at moderate speeds. It is not a midget car and in appearance would resemble the conventional size automobile in styling. Hope is that it would be priced at least \$300 to \$400 under the standard car made by the company. The plans for its production, of course, are very tentative and may never materialize, but it is an indication that the company is interested in the question of a budget automobile for persons priced out of the regular market.

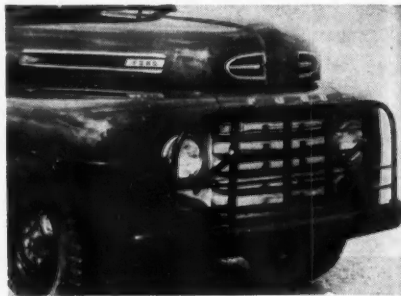
Gas Turbine Workout

The question of gas turbines for automotive use will get a working over at the SAE Summer Meeting at French Lick, Ind., in June. At least one prominent Detroit automotive engineer will present a paper on turbines. It is believed that his conclusions will arouse considerable discussion and probably will not be too well received by proponents of the gas turbine who expect to see its adoption on automobiles before too long.

Bonded Linings Tiff

Both Chevrolet and Plymouth have used bonded linings on light model trucks for more than a year, and now have put them

Ford Guards



Two new grille guards, engineered for all 1948-49 Ford trucks, are now available through Ford dealers. Outside framing and braces are of steel tubing, while crossbars are stampings

on cars as standard equipment. Chevrolet announced its new models first, but neglected to say anything about bonded linings. Chrysler put out a release in February before new model public announcement, telling about bonded linings as standard equipment. Chevrolet bounced back with a story claiming to be the first major producer to supply bonded brakes as standard equipment. (Crosley was first to use them, about mid-1948.) Actually, both used them on a limited number of cars during the 1948 model run as a test. At any rate, both large companies now have them, and for the time being most replacement business will be on a factory exchange basis. However, jobbers and large dealers are expected to install bonding equipment at a faster rate, now that bonded linings are being used in such large volume.

WASHINGTON RUNAROUND

Continued from Page 10

and water transportation conditions as proposed in a resolution sponsored by Senator Reed (R.), of Kansas and Senator Myers (D), of Pennsylvania. Purpose of the investigation as outlined in the resolution is to determine: (1) whether existing conditions conform to the national transportation policy, and (2) the effect of large expenditures of public and private capital on transportation charges and to what extent such expenditures are reflected in the cost of production and prices to consumers.

'48 Trailer Total 44,441

Truck trailer production during December amounted to 3424 units, according to the Bureau of the Census, bringing the output for 1948 to a total of 44,441, as compared with 53,096 the previous year. The December total represented a decrease of 10 per cent from November, but 4 per cent above December 1947.

Supreme Court to Review Pricing System Case

As forecast in this column last month, the Supreme Court has agreed to review the Rigid Conduit case—generally conceded to be one of the keys which could unlock the present controversy over the legality of delivered pricing systems. In this case, the Circuit Court upheld a Federal Trade Commission order which found that the Rigid Conduit industry had conspired to use the basing point system and that individual use of the basing point system with knowledge that it was used by other sellers constituted an unfair method of selling.

COMMERCIAL CAR JOURNAL has learned that there is a distinct possibility that the FTC may take it upon itself to end the controversy. It would not be too surprising if the FTC, in its presentation to the Supreme Court modified its order on the Rigid Conduit case. Should this

situation come about, it is also not too much to expect the Commission to modify its order in the Pittsburgh Plus case—giving the U. S. Steel Corp. authority to absorb freight.

But despite what ruling may be forthcoming from the Supreme Court and the FTC, there is still considerable sentiment on Capitol Hill for legislation which would definitely spell out industry's authority to absorb freight and quote delivered prices. It is felt that this is necessary due to the fact that what the courts and FTC have done and may undo, they can do again sometime in the future.

Replacement Standard

The first government replacement standards for motor trucks will be issued soon. The Interdepartmental Motor Equipment Committee is working on standards for trucks up to and including capacities of 3 tons (20,500 gw) in two general classes: (1) standard trucks complete with standard bodies, and (2) special body trucks.

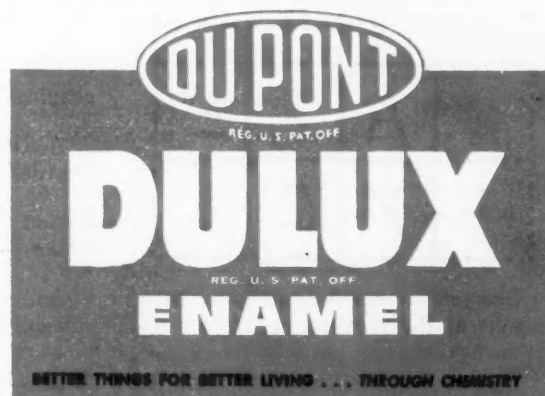


How a spray gun can boost your public relations

A spray gun can help you gain goodwill . . . when it's used to put a bright, long-lasting finish on your fleet. Your trucks are your traveling representatives. When they look neat and well-kept, they convey a message that builds confidence in your organization and your product.

Why not capitalize on this potential public relations value? Make your trucks more attractive with Du Pont DULUX Enamel. DULUX has all the essential finish qualities needed by road-seasoned trucks and buses. It's tough, handsome . . . easy to work with. And it keeps its full gloss and color despite the highway hazards of stains, weathering and rough handling. Furthermore, DULUX gives extra-long wear. That means less "paint-shop time" for your trucks . . . lighter day-to-day maintenance costs. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Del.

FOR A COMPLETE JOB—Du Pont Preparakote, the primer that *fills*, is specially formulated to work with DULUX. It goes on easily, dries fast, and stays put! From start to *finish*...use Du Pont finishes.



Time Out for PLAY

by
BORIS RANDOLPH

A stylized illustration featuring a fireman in a helmet and uniform standing behind a fire truck. To the right of the truck are several toys: a ball, a block, and a cube. The entire scene is set against a background of horizontal lines, suggesting a road or a play area.

Quick, Henry, The Fleet!

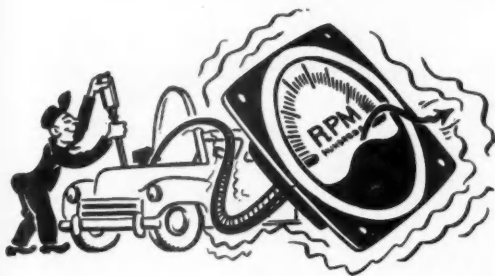
There was obviously something wrong with these instructions and the fleet superintendent soon noticed it, but his assistant pointed out that if they borrowed one truck the division would come out all right and the borrowed truck would be left over to be returned to its owner.

Squaring Things Off

	R	A	Y
	A	T	E
	Y	E	S

Gear Shifts

COMMERCIAL CAR JOURNAL, March, 1949



Conference Corner

Question:_____

Can Engine Governors Be Set Accurately In the Fleet Shop Without Road Testing?

Engineering Opinion Varies . . .

YES, say some, provided the operator takes into consideration the load condition . . . When vehicles are overloaded, it is impossible to get the full rpm.

A velocity-type governor can be set

quite accurately through use of a tachometer—under competent hands—reports another manufacturer.

NO, says another engineer. Spin test conditions do not exactly dupli-

cate the conditions that prevail on the vehicle when it is on the road.

And another recommends that only no-lead cutoff rpm and the overrun be checked in the shop. The other factors must be tested on the road.

Spin Test Doesn't Duplicate Operation

by C. W. McCullough

Pierce Governor Co., Inc.

"It has been our opinion that engine governors cannot be actually pre-set either at the factory or in the shop as spin test conditions do not exactly duplicate the conditions that prevail on the vehicle when it is on the road.

We have repeatedly tried pre-setting governors under all types of conditions, and while some degree of accuracy can be obtained, it is usually necessary to make minor adjustments in setting after the governor is installed on the vehicle. We are well acquainted with the fact that even in like models of engines there are minor variations of ignition, carburetion, manifold, etc., and these conditions all tend to affect in some degree the governor performance. In addition, for the same model of engine, there are minor dimensional tolerances of construction that affect very slightly the location of the governor arm, control rod, and throttle box lever. These things also affect in some manner the speed and performance of the governors on the vehicles.

"It is, therefore, our general recommendation that final setting be made on the actual vehicle. It has further been our experience that even dynamometer test does not actually duplicate the actual road condition completely."

Velocity Type Can Be Set With a Tachometer

by F. E. Williams

Zenith Carburetor Div.
Bendix Aviation Corp.

"A velocity-type governor can be set quite accurately through the use of a tachometer provided the one who is doing the job has been properly instructed and has had considerable experience. Setting the governor on the road is the more

accurate way for people with limited experience.

"The most accurate method to set a velocity governor with a tachometer is to first set the no load speed requirement by adjusting the main spring. Let's say this is 2600 rpm. The engine rpm must be permitted to settle back to standby idle and snapped wide open. Carefully observe the amount of over-run. Over-run is the number of rpm which can be observed on the tachometer above the speed to which it will settle back under no load with throttle open.

"A governor which has much more than 50 rpm over-run is likely to be a very 'sharp' governor and will generally show a 'surge' in actual operation. If, when the throttle is snapped open from idling speeds, the top engine speed is approached very slowly without over-run, it is a 'flat' governor and may cut into the horsepower curve to the extent of 6 to 8 horsepower.

"From this we learn that any over-run up to 50 rpm could

(TURN TO PAGE 30, PLEASE)

AUTOCAR PROVIDES NEW DOOR VENTILATOR WINGS



*...with an
exclusive feature*

THIS IS IT!

A small hole in the inner door panel permits a screw driver to be inserted to adjust a small set-screw, should the ventilating wing become too loose or too tight. This saves dismantling the whole door to change the setting of the ventilator.



DeLuxe Cabs for Conventional Model chassis now have door ventilator wings. These provide passenger-car comfort for the driver. The front windshields are now stationary, and ventilation is controlled by manually adjusting the movable glass wings in the door windows. These wings remain rigid at any selected position.

The use of this type of ventilation in heavy-duty truck cabs is an innovation that will be appreciated by all drivers. Autocar will eventually extend it as standard equipment to both Sleeper Cabs and the wider cabs used on four-wheel-drive models.

AUTOCAR TRUCKS

They cost less, because they do more work

Manufactured in Ardmore, Pa. • Factory Branches and Distributors from Coast to Coast

NEW!

STOP

OVERHEATING TROUBLES

Eliminate radiator, block cleaning and rodding costs

- ★ Cleans both the motor block and radiator of lime, scale, rust, and other debris and filters it completely out of the system.
- ★ Keeps the water (or any other coolant) clean and clear, prevents the further accumulation of lime, rust, scale and other debris.
- ★ Makes the use of inhibitors and cleaning compounds entirely unnecessary.
- ★ Assures proper and unrestricted circulation of coolant at all times.

MODEL TB (ILLUSTRATED) FOR TRUCKS AND BUSES
1½ TON AND OVER. MODEL A FOR PASSENGER
CARS, TRUCKS AND BUSES TO 1½ TON.

WRITE FOR DETAILS
SPARK-O-LINER CORPORATION
MINNEAPOLIS 4, MINNESOTA



INSTALL THE NEW

Perry *Cooling System* Filter

PAT. PENDING



Conference Corner

Continued from Page 27

be the momentum of the tachometer running beyond the 'sharp' governor cut off. Any over-run beyond 50 rpm will generally be too 'sharp' and any over-run less than this will generally be too flat. The proper adjustment should be made in either case in accordance with the instructions covering the particular governor involved."

Electric Tachometers Provide Accurate Setting

by W. J. Potter

Service Manager
King-Seeley Corp.

"First, with reference to how governors can be set most accurately: Before giving our comments on this controversy, we should like to say a word or two as to our procedure in developing governor calibration for new engines. The first step in such a development is to run ungoverned torque and horsepower curves of the new engines on an engine dynamometer. Frequently the engine, at this stage of its development, is not equipped with the standard accessories such as fan, air cleaner, etc., which it finally has when it goes into production. These omissions have a direct bearing on governing and have caused us to make a recheck by vehicle road test before releasing the new design calibration for production. This road test is made in such a way as to show no load, road load and full load requirements. After completion of both the engine dynamometer and road test checks, flow stand records are made of the particular calibration and specifications set for our production. With these flow stand readings it is possible, accurately, to set governors in our factory to within plus or minus 100 rpm of the speed specified by the engine manufacturer.

"The average fleet operator can accurately set the no load speed of a governor on the engine in his shop on the floor with the use of a tachometer. Incidentally, in this connection, we have recommended the use of electric tachometers in preference to mechanical drive tachometers, particularly of the flexible or stiff shaft, friction type, because of the variances we have observed with this type of tachometer incidental to friction of the shaft against extended grills, radiators, etc. Here again, if the operator is sufficiently experienced in the use of governors, the accurate setting of the no load speed, coupled with an inherent knowledge of the characteristics of the particular governor model on the particular engine will permit him to predict quite accurately the resultant full load and the average road load speed.

"If the operator clearly understands that a floor no load setting provides a speed which will be somewhat less under road load and considerably less under full load, we believe it entirely safe and proper for him to use the floor setting method. However, it is better to recheck floor settings with road tests under normal average load conditions. In our opinion probably the best set up in the field for setting governors, is a chassis dynamometer."

Floor Check is OK If Load is Considered

by C. E. Johnson

Hoof Products Co.

"Governor setting can be made on the floor with a tachometer—providing the operator takes into consideration the load condition. There is a variation between no load and road load, although when we set governors on our own dynamometers to take care of road load conditions, we calibrate governor to close regulation at the same time taking into consideration there must be some tapering off.

"If there were no variation between the no load and full load, the governor would constantly open and close for practically every crack in the pavement, a condition that would make it very uncomfortable for the driver, so there must be what we call a 'tailing off.'

"Another point to bear in mind is the fact that a great many of these over-the-road vehicles, or city vehicles for that matter, are terrifically over-loaded, so that even without a governor under load it is impossible for the operator to get the full rpm."

Road Test is Necessary Since Governors Vary

Mallory Electric Co.

"There are several ways to test an engine governor in the field. However, in order to understand the test procedures, it is first necessary to understand the factors to be tested, which are itemized as follows: 1. Cut-off rpm, 2. Stability (surging), 3. Difference between full-load rpm and no-load rpm, 4. Governor cut-in shock, 5. Overrun.

"The cut-off rpm, can be checked with a good tachometer. The no-load cut-off can be checked on the floor by running the engine 'against the governor' in neutral. However, the road-load and full-load cut-off rpm must be tested on the road unless a chassis dynamometer is available.

"Surging cannot always be checked in the shop by running the engine at governed rpm at no-load. In some governors, if the engine surges at no-load, they will not surge under load. Other governors tend to surge under load but do not surge at no-load. Therefore, the best test for surging is to drive the vehicle on the road in all gears at the governed speed; load the vehicle by climbing a hill or applying the brakes with the carburetor throttle wide open.

"The third item represents the loss in engine rpm when the engine is loaded from no-load to full-load. The no-load rpm can be checked when the engine is at governed speed with the clutch disengaged. The full-load rpm can be found with a vacuum gage.

"The fourth item is the shock observed when the governor cuts in when accelerating; this shock accompanies a 'sharp' governor (one with very little loss in rpm when the engine loads). This factor cannot be determined in the shop. Since the shock is most severe in the lowest gear, it is necessary to adjust the governor 'broad' enough so that not too much shock is encountered in this gear when accelerating.

"The overrun represents the difference between the settled governed rpm and the maximum rpm attained when the engine is accelerated from idle. The overrun can be checked in the shop by accelerating the engine fast to governed speed and observing the amount of additional rpm before the governor settles back to governed speed.

"From the foregoing discussions, it is evident that only the no-load cut-off rpm and the overrun can be checked in the shop, whereas the other factors must be tested on the road."

The dictionary gives two meanings for the word quiz: (1) the act of questioning either oral or written and (2), something or someone odd or ridiculous. We have run across several odd facts in connection with the automotive industry and sincerely hope the answers you provide are not ridiculous. Seven right will keep you out of the latter class and the answers are on page 118.

1

Persons with an inventive trend should concentrate on the automotive industry because, since 1899, one in every six inventions listed at the U. S. Patent Office has been an automotive invention. Generally speaking, how many automotive patents are granted each year?

- a) 6,000
- b) 8,000
- c) 10,000
- d) 12,000

2

The automotive industry has recently coined a new word, "automation," which will surely make Webster's Dictionary the next printing. This word has reference to

- a) electronics
- b) material handling
- c) assembly lines
- d) engine timing

3

Mufflers, which always have required maintenance and quick replacement, can now be made to last many times longer than present models. This is accomplished by

- a) liquid stainless steel
- b) electro-plating
- c) aluminum coating
- d) porous chromium plating

4

An American mechanic working in England might be a little confused with their automotive terms. All five must be matched correctly. Miss one (1) and deduct ten points.

- a) car hood () bonnet
- b) trunk () luggage boot
- c) paved road () built up
- d) lug wrench () hood
- e) car top () wheelbrace

JOBSERVATIONS

by Buster Rothman

We do not get ulcers from what we eat, but from what's eating us.

Many climb to considerable heights by remaining on the level.

Success comes from hanging on—when everybody else lets go.

The fellow who hides his light under a bushel won't ever set the world on fire.

Have you ever noticed that the knocker is always outside the door?

That fellow cannot travel far who works like a horse only when the boss rides him.



CCJ QUIZ



by G. W. BAHL

5

Total world output of natural rubber in 1948 exceeded 1,247,500 tons. Seventy per cent of all rubber used in this country went into tires and tire repair materials. The total American automobile mileage for one year equals 3,000 trips to the sun. How many tires would it take to cover this mileage?

- a) 40,000,000
- b) 60,000,000
- c) 80,000,000
- d) 100,000,000

6

Persons interested in shortages of trucks and cars should consider that 20 million tons of raw steel have been lost to the nation by strikes since the war. The automotive industry is the largest single user of steel, taking 15 per cent of the total output. This means strikes have cost automotive manufacturers 3 million tons of steel which is sufficient to build the following number of vehicles . . .

- a) 750,000
- b) 1,000,000
- c) 1,500,000
- d) 2,000,000

7

The first commercial version of the Kettering high compression engine will be shown shortly on 1949 vehicles and will have a compression rating of 7:25 to 1. This is the highest increase possible in compression ratio.

- () true
- () false



These pithy epigrams are worth their weight in gold if used properly in the fleet field. We suggest that these messages be reproduced in large type—on the blackboard or on the shop bulletin board—or used in letters and news bulletins to employees.

8

Use of the new high compression engines requires a 90-95 octane fuel not available as yet in large quantities. Anti-knock quality of automotive fuels can be raised by

- a) increasing sulphur content
- b) adding silicone
- c) using liquid coolants
- d) decreasing thermal efficiency

9

The temperature of the burning mixtures in the combustion chamber of a gasoline engine reach as high as 4500 degrees Fahrenheit. The only successful instrument devised by scientists to determine the exact temperature was a

- a) pyrometer
- b) potentiometer
- c) oscillograph
- d) spectograph

10

Pressure in the cylinder of an engine also increases tremendously, rising as high as 400 pounds per square inch.

- () true
- () false

DRIVE SLOWGANS

by Buster Rothman

You're only a foot from trouble—check your brakes.

Grime (on a windshield) doesn't pay!

Move over! Give Narrow Minds a Wide Road!

Better late a few minutes than laid up a few months.

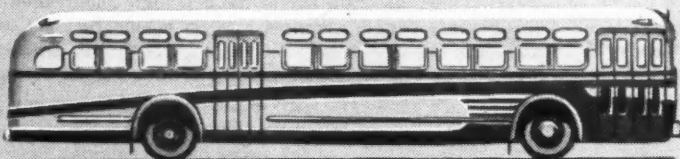
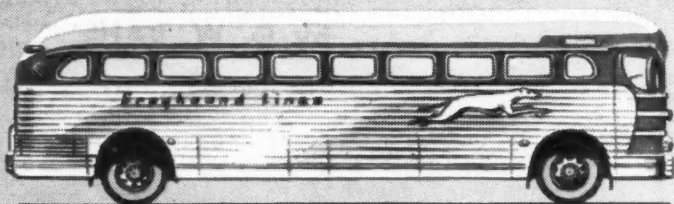
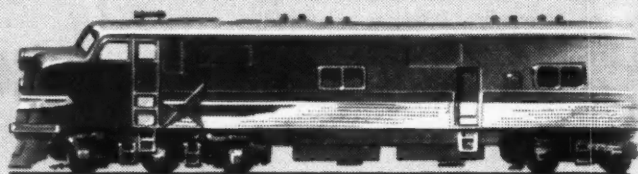
Ease-up when there's a freeze-up.

When you speed upon the ice, Death is there to load the dice!

By Road and by Rail

THE TREND IS TO DIESEL

DIESEL LOCOMOTIVES—In 1938, there were 262 mainline Diesel locomotives. In 1948, the number was in excess of 5,000. Seven out of ten Diesel locomotives in passenger service, and three out of four hauling the new fast freights, bear the General Motors nameplate.*



DIESEL COACHES—In 1938, less than 200 Diesel coaches were in operation. By 1948, the number had multiplied to over 18,000. GMC production has accounted for more than 90 per cent of the total. Latest examples of GMC's Diesel coaches are the streamlined Greyhound inter-city coach and the long, low, 55-passenger transit model, shown at left.*

DIESEL TRUCKS—In 1938, there were less than 500 Diesel trucks. By 1948, the number had jumped to 12,000. In recent months, GMC has produced nearly 30 per cent of the total. Shown below is a GMC 200-horsepower Diesel tractor.*



GMC Diesel trucks are powered by engines of the same basic design as the Diesel locomotives which pull many of the finest, fastest trains.

This advanced and exclusive GM 2-cycle design cuts Diesel weight without sacrifice of power, thus permitting greater payloads. It also provides outstanding fuel economy, low maintenance costs, exceptional dependability and long life.

GMCs are the only Diesel trucks offering a choice of four- and six-cylinder engines . . . specially engineered Diesel chassis . . . a selection of eight series of models. And, more important, GMC has had unequalled experience in equipping vehicles with these modern, time and money saving power plants.

**GMC TRUCK & COACH DIVISION
GENERAL MOTORS**



*Estimated figures based on latest available information



UTILITY CONFERENCE

The Spring Conference of Public Utility Motor Vehicle Supervisors, sponsored by the Motor Vehicle Committee of the American Gas Association and the Transportation Committee of the Edison Electric Institute, will be held in the Netherlands Plaza Hotel, Cincinnati, April 4, 5 and 6.

Among principle subjects to be considered are the following: "Economy and Application of Diesel Engines," P. Glen Shoemaker, Detroit Diesel Engine Division; "Results of Good Maintenance," Ralph E. Kress, Chevrolet Motors Division; "Developments and Principle of Dyna-Flo Torque Converter," Oliver K. Kelley, General Motors Corp.; "Development and Application of Lubricating Oils," Jack Lane, Socony-Vacuum Oil Co., and "Methods for Improving Safe Handling of Motor Vehicles," E. W. Jahn, Consolidated Gas & Electric Light and Power Co. of Baltimore.

LIBERALIZED WHITE CREDIT PLAN

A new liberalized financing plan, for the purchase of motor trucks and available to common and contract carriers of proved financial standing has been announced by White Motor Co. It encompasses down payments of as little as 10 per cent and time payments ranging up to three years, depending upon the needs of the carrier and the circumstances surrounding the sale.

TRAILER CREDIT FUND

A \$5,000,000 credit fund available to Southern California and Arizona truckers for use in financing Brown Aluminum Trailers has been announced by Lee W. Hayes and Associates who recently purchased Brown's sales and service branch at Los Angeles.

COOGAN SUCCEEDS PAGE

Edward F. Coogan has been elected president of The Autocar Co., succeeding



Robert P. Page, Jr., who has resigned for reasons of health. As executive vice-president, Mr. Coogan has been the active head of Autocar for many months during Mr. Page's illness. The directors at the same meeting elected Mr. Page chairman of the board.

Mr. Coogan's past duties with Autocar include manager of the New Haven branch, Boston district manager, Philadelphia district manager, and vice-president in charge of sales at the headquarters in Ardmore.

MARCH 14-18—Fleet Supervisor Training Course, University of Oklahoma, Norman, Okla.

MARCH 20-22—New England Motor Carrier Safety Conference, Narragansett Hotel, Providence, R. I.

MARCH 21-24—Fleet Supervisor Training Course, N. C. State College, Raleigh, N. C.

MARCH 22—New Jersey Motor Truck Assn. Annual Dinner, Hotel Essex House, Newark.

MARCH 22-23—Fleet Supervisors Training Course, University of Kansas, Kansas City, Mo.

MARCH 24—Maine Truck Owners, Assn., Annual Meeting, Falmouth Hotel, Portland, Me.

MARCH 28-30—Society of Automotive Engineers National Transportation Meeting, Statler Hotel, Cleveland, Ohio.

MARCH 28-APR. 1—Short Course for Motor Vehicle Fleet Supervisors, University of Florida, Gainesville, Fla.

MARCH 28-April 1—Fleet Supervisors Training Course, University of Florida, Gainesville, Fla.

MARCH 29-April 1—Greater New York Safety Council 19th Annual Safety Convention & Exposition, Hotel Statler, New York, N. Y.

APRIL 1-2—Wyoming Trucking Assn. Convention, Townsend Hotel, Casper, Wyoming.

APRIL 11-15—Fleet Supervisors Training Course, University of Connecticut, Hartford.

APRIL 15-16—Louisiana Motor Transport Assn. 9th Annual Convention, Washington-Youree Hotel, Shreveport, La.

APRIL 18-22—Fleet Supervisors Training Course, University of Michigan, Ann Arbor.

DATES AND DOINGS

APRIL 25-29—Fleet Supervisors Training Course, University of Wisconsin, Madison, Wis.

APRIL 25-29—Fleet Supervisors Training Course, University of Maryland, College Park, Md.

MAY 2-6—Fleet Supervisors Training Course, Iowa State College, Ames, Iowa.

MAY 9-13—Fleet Supervisors Training Course, S. D. State College, Brookings, S. D.

MAY 9-13—Council of Safety Supervisors and Equipment and Maintenance Council, ATA, Annual Spring Meeting, Melbourne and Sheraton Hotels, St. Louis, Mo.

MAY 16-20—Fleet Supervisors Training Course, Northeastern University, Boston, Mass.

MAY 19—Rhode Island Truck Owners Assn. Annual Meeting, Narragansett Hotel, Providence, R. I.

MAY 19-21—Washington Motor Transport Assn. Convention & Truck Rodeo, Olympic Hotel, Seattle, Wash.

MAY 28-31—Texas Motor Transport Assn. Annual Convention, Buccaneer Hotel, Galveston, Texas.

JUNE 1-3—President's Highway Safety Conference, Departmental Auditorium, Washington, D. C.

JUNE 5-10—Society of Automotive Engineers, Summer Meeting, French Lick Springs, Ind.

OCT. 15-20—Baking Industry Exposition, Municipal Auditorium, Atlantic City, N. J.

OCT. 21-26—American Trucking Associations, Inc., Annual Convention, Hotel Statler, Boston, Mass.

ICC POSTPONES LENOIR ARGUMENT

Oral argument in the Lenoir and Schenley Cases, originally scheduled for March 9 in Washington (CCJ, Feb., p. 182), has been postponed to a date "later to be fixed."

REPORTS REQUIRED FROM CLASS II AND III CARRIERS

The Interstate Commerce Commission's annual report indicates that an annual report from Class II and Class III motor carriers, as well as from Class I carriers, will be required according to George H. Minnick, comptroller of the American Trucking Associations, Inc. The requirements start with the year 1948.

"Reports will be confined principally," he said, "to the reporting of revenues, expenses, vehicle miles operated, tons transported, equipment operated, and some limited information respecting the number of employees."

REPORTING OF ACCIDENTS

Despite strong objections from organized groups, at initial hearings, the proposed ICC Safety Regulations, in their present status, still would require the reporting of accidents by private carriers.

PETERBILT ACQUIRES MACDONALD

Peterbilt Motors Co. of Oakland, Cal., has purchased the entire assets of the MacDonald Truck and Mfg. Co. of San Francisco.

SEDAN DELIVERY PRICE

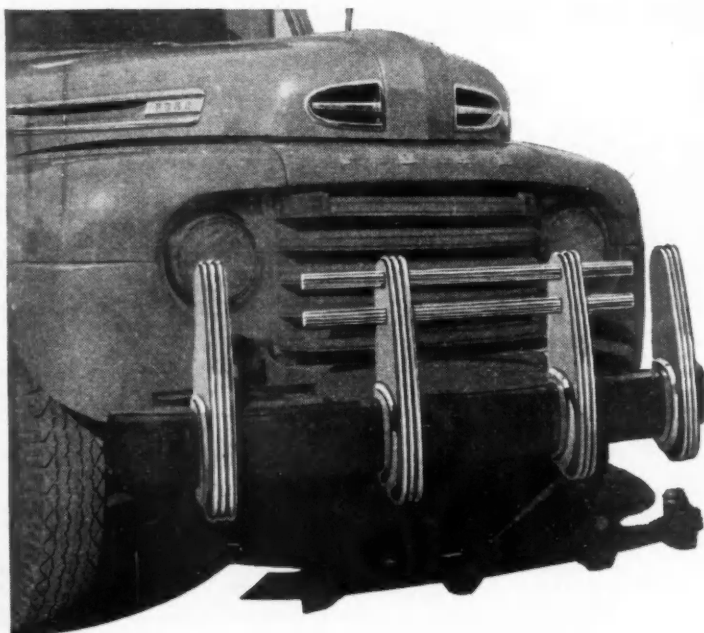
Price of the new Pontiac sedan delivery, delivered in New York but exclusive of city sales tax, has been announced at \$1859 for the 61cyl. model and \$1927 for the 8-cyl. version. The model was described in February CCJ, page 141.

(TURN TO PAGE 154, PLEASE)

Sturdy as the Truck They Guard!



TRUCK GUARDS for All Makes



Massive New Stamina for GRILLES, LIGHTS, FENDERS

The grille, fenders and lights of all trucks get maximum protection with massive, sturdy Cello Guards. Made of extra heavy, cold-drawn steel. Uprights are 20½ inches high. Cross rails are 1½ in. square, embossed, cold-drawn deep channel sections. Rugged, sturdy studs, nuts and lock washers fasten heavily rust-proofed back plates. Packed in individual cartons. Approx. wt. 25 lbs. Order by make, model, year.

DUAL RAIL GUARDS, List Price \$22.00



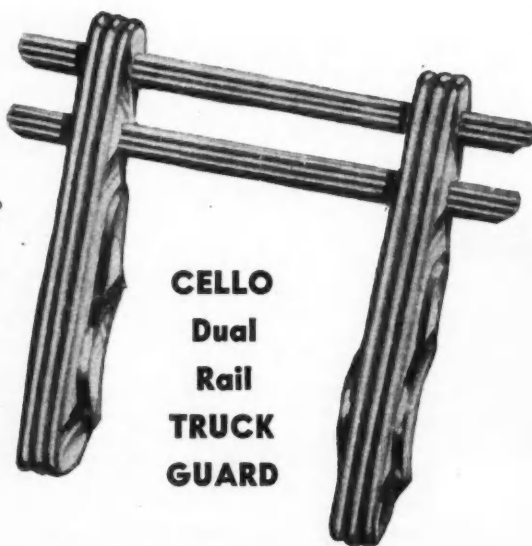
**A Great Name
in
Automotive
Accessories
Since 1910**



SINGLE UPRIGHT GUARDS

Truck owners look to Cello for a bulwark of heavy-gauge steel between point-of-impact and costly grille work, lights and fenders. 20½ in. high, extra-heavy gauge cold-drawn steel. Rugged, sturdy studs, nuts and lock washers for fastening heavy, rust-proofed back plates. Packed 6 to carton. Approx. wt. 60 lbs. per carton.

List, each \$8.75



CELLO Dual Rail TRUCK GUARD

CELLO PRODUCTS COMPANY, East Boston 28, Mass.

No other oil can give you all this!

We sincerely believe that there is no time like the present to compare the oil you may be using now with *Gulfpride-Diesel*.

For *Gulfpride-Diesel* is an outstanding oil that can be a real help to your over-all operation. *Gulfpride-Diesel* is The World's Finest Diesel Lubricating Oil for automotive Diesels and gasoline engines in heavy duty service.

First of all, *Gulfpride-Diesel* will help you get longer engine life. *Gulfpride-Diesel* is Alchlor-processed (an extra refining step exclusive with Gulf). It has a rich, full paraffin base that provides a particularly strong oil film and superior lubrication under the toughest operating conditions.

Full Detergency!

Gulfpride-Diesel will help keep your engines clean, because it has full detergency.

High-temperature sludge, piston varnish, lacquer and stuck rings will be avoided or minimized in automotive Diesel engines when *Gulfpride-Diesel* is used.

Gulfpride-Diesel has a patented antifoam agent that prevents crankcase foam. You will use less oil with *Gulfpride-Diesel*—rings stay clean and free, insuring better compression and proper oil control.

Remember: *Gulfpride-Diesel* is The World's Finest Diesel Lubricating Oil. Contact your nearest Gulf Office for further details!

These tires combat cracking!

Gulf Heavy-service Truck Tires have zig-zag, anti-skid tread. Angled grooves that combat cracking. Weftless rayon cord to reduce heat! See these outstanding tires at any Gulf Dealer's.



GULF OIL CORPORATION • GULF REFINING COMPANY

Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

LAUGH IT OFF



Safety Sadie: "Hello there, Cora, glad you're back. You certainly look nice and tanned. Did you enjoy your Florida vacation?"

Catty Cora: "Bet you life I did. Had the grandest time ever. For \$40 a day I stayed at the Roney Plasma."

Safety Sadie: "You mean Plaza. Plasma is blood."

Catty Cora: "Well, do you think \$40 a day is barley water?"

CCJ

The shop foreman was returning home from a dinner party given by the officials of a local automotive supply house. Pleasantly glowing from the effects of the liquid cheer he had imbibed, he found great difficulty in unlocking the door to his house. Finally a passing policeman, asked if he could assist by handling the key.

"Nope," said the shop foreman, "I can hold the key; you hold the house."

CCJ

Doctor: "There's no need to worry about your wife; you'll have a different woman when she gets back from the hospital."

City Driver: "Yeah, but what if she finds it out."

CCJ

The Safety Director was ready to throw in the towel. For the past two hours he had driven up and down, up and down, through blinding snow trying to find one of his company's units which was reported wrecked on the icy roads of a section of the Tennessee hill country. Finally, he reluctantly admitted that he was lost and stopped at a mountaineer's cabin to get his bearings. "Say, friend," he addressed the old codger who answered his knock, "I guess I'm lost. Can you help me out of my predicament?"

"Is thar a reeward out fer ye?" asked the old galoot cautiously.

"No," said the Safety Director. "What does that matter?"

"Wall," came the slow reply, "no matter a-tall, 'ceptin' yer still lost."

FLIRTY FLO SAYS THAT A MAN WHO SAYS HIS MOTOR HAS FAILED IS USING THE SAME OLD STALL.

CCJ

The freight handler ran into the fire department and hollered: "Hey, fellers, my wife has run away again!"

"Well, what are you telling us for? Why don't you tell the police?" one fireman asked.

"Because," the freight handler replied, "the last time she ran away, I told the police and they found her."

CCJ

ROAD DRIVER: "WAITRESS, THERE'S A BUTTON IN MY SOUP."

HASH HOUSE HANNAH: "JUST A TYPOGRAPHICAL ERROR, SIR. IT SHOULD BE MUTTON."

CCJ

Fleet Owner: "I always pay my income tax all at once."

Secretary: "But you're allowed to pay it quarterly."

Fleet Owner: "I know, but my heart can't stand it four time a year."

The Maintenance Superintendent was conscious that trouble was brewing when he left home in the morning. When he got back that night, he learned what the trouble was. With tears in her eyes his wife exclaimed: "I know you don't love me—you've forgotten my birthday!"

"Darling," he said, "I'm more sorry than I can say, but it is really your fault." "My fault?" she exclaimed. "How can that be?"

He took her hand in his. "How can I remember your birthday," he asked, "when there is never anything about you to remind me that you are a day older than you were a year ago?"

CCJ

Truck Dispatcher: "I'd like to place an and offering \$700 reward for the return of my wife's pet cat."

Newspaper Adtaker: "That's a mighty big reward, sir, for one little old cat."

Truck Dispatcher: "Not this one. You see, I drowned it."

CCJ

Doctor: "Has your husband taken the medicine I prescribed: A tablet before each meal and a small whiskey after?"

Weavin' Willie's Wife: "He's a few tablets behind but he's months ahead on the whiskey, Doc."

CCJ

Personnel Manager: "Do you mean to tell me you can't live on what we pay you?"

Transportation Clerk: "Oh, I wouldn't have you think that for all the world. Of course I can live on it."

Per. Mgr.: "Well?"

Trans. Clerk: "It's just the little things I long for. Don't you see, it's just that a man feels he's getting on in the world when he can afford those extra little luxuries . . . like . . .

Per. Mgr.: "Like what?"

Trans. Clerk: "BREAD!"

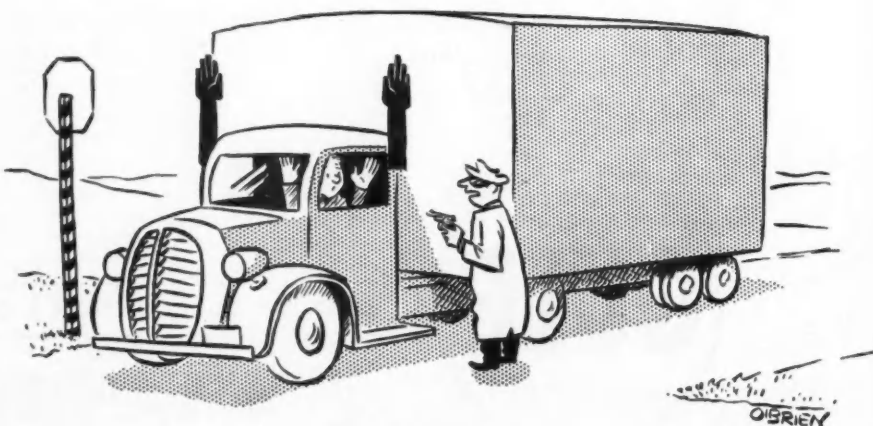
CCJ

Grease Monkey: "Last night I took a girl to dinner and a movie—and then we rode around the park in a taxicab for two hours!"

Mechanic: "What happened?"

Grease Monkey: "The meter wasn't clicking but I was."

RESUME WORK



"O.K., Stick 'em up!"

MEET THAT CONTRACT...

when your fleet rolls on KELLYS!

Keeping schedules and contracts . . . meeting deadlines . . . that's what it takes to make money in the trucking business!

And that's where Kellys can help you. Because Kelly—The Trucker's Tire—helps you finish the job *on time every time!*

Kellys thrive on rough treatment. Tough Armorubber tread gives you extra mileage . . . insures traction under the most punishing conditions . . . prevents lay-offs due to tire troubles.

What's more, today's Kelly is built with the know-how and pride of workmanship that have gone into Kellys for 55 years!

And that means better operating efficiency . . . lower operating costs for you!

So, choose Kellys the next time you buy—and make *every deadline a sure thing!*

THE KELLY-SPRINGFIELD TIRE COMPANY,
CUMBERLAND, MARYLAND

Know-how makes
them Better



KELLY
REGISTERED

KELLY COMMERCIAL
HEAVY TREAD

KELLY
DUAL TRAC

KELLY
LUG TRAC

KELLY
RIB TREAD

KELLY
DELIVERY TRUCK TIRE



A TOUGH KELLY FOR EVERY JOB!

CCJ BULLETIN BOARD



CRY, DRIVER, CRY!

And Get a Better Grip on Your Gripe Sheet

Is your daily truck report worth the paper it is written on? Too many of them aren't.

Worthless truck reports are the result of three types of driver droop. There is the "pencil-baffled" driver. Give him an audience and he can talk his head off. But put a pencil in his hand and tell him to write it down, and he freezes up like a pea in a frozen food factory.

There's the "ear-bound" driver. He is the sounds-good-to-me type. The engine runs so he figures everything will make an-

other mile.

Then there's the "ants-en-pants" driver. He is always in such a hurry that he scrawls a few lines and heads for the gate on the double, hoping someone else gets the truck next time.

It's your responsibility, Mac, to see that the mechanics know about *anything* that is not normal. It may be your neck, Mac, if they fail to catch a weak spot involving the safe operation of that wagon.

If the truck runs ok, ok. If it rattles, put it down; if it squeaks,

put it down; if it backfires, put it on the blubber sheet. When it pulls to one side, fails to start, fails to stop, gets hot, gets cold, for Pete's sake put it in writing so Pete can fix her up.

Some drivers take pains to sob out the troubles they have taken the pains to look for. Those are the boys who get over the route and home before you come limping into the shop. They get the awards for safety, the best gas mileage, commendations from the front office. They drive day in and day out and don't have to be towed home—because they have seen to it that the causes of breakdowns are caught before they occur. They have better dispositions and better records — because they drive better trucks. Remember—the more you wail, the better—provided your gripes are legitimate. So listen, look, and "feel out" that truck; then tell it to the shop. All you need is a pencil, an ear, an eye—and a clear head.

Get The Lead Out—And Put It On Paper

Reprints of the above are available at nominal cost. Write the Editor

WHEN THE JOB IS *Tough*



ROSS BRINGS EASE . . . AND ECONOMY

Ross
Cam & Lever **STEERING**

WHEN THE LOAD IS HEAVY and the road is bad, Ross handles the steering job with ease. Ross steering also means economy and safety in every type of heavy-duty service.

Experience gained through the use of Ross steering gears on military vehicles during world war II has led to current improvements in Ross design, resulting in: (1) *Increased mechanical reduction . . .* (2) *More compactness of design . . .* (3) *Reduction in weight . . .* (4) *Greater arm angular-travel . . .* (5) *Improved metallurgy . . .* (6) *Increased efficiency.*

Throughout 42 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

PUBLICATIONS

FREE



L6. Clutch Troubles

Here is a booklet you just can't afford to pass up. Called "Clutch Troubles and Their Cures" this publication has been prepared by a well-known manufacturer in the interest of helping the fleetman get better service from the lining as well as from the mechanical parts of the clutch.

Illustrated in cartoon style the text is aimed directly at the driver and mechanic. The twelve full pages cover such typical complaints as dragging, grabbing, slipping, chattering, squeaking, rattling and failure to transmit power. Another section covers practical pointers on removing the clutch with special directions on what to do before installing new clutch plates. A section worthy of study is the one on misalignment, one of the most frequent causes of improper clutch operation.

Just write L6 on the free postcard.

L7. Welding Guide

Welders, as well as all mechanics operating or expecting to operate acetylene welding equipment, will be interested in studying this 20-page booklet just released to the fleet field. Entitled "How to Set Up and Operate Welding and Cutting Equipment" this booklet features complete step-by-step instructions for connecting, operating, maintaining oxy-acetylene welding units.

Much of the text concerns itself with showing the reader just how oxy-acetylene welders work. Men who know this will not only be more safety conscious but will be more efficient in their welding. Each step in setting up the unit is outlined in detail and covered with clear pictures so that the novice can soon learn how to do the job quickly and safely.

USE POSTCARD

NO STAMP NEEDED

A selected list of the latest literature —
catalogs, pamphlets, charts—chosen to help
fleetmen improve operation and maintenance

This valuable booklet is yours for the asking. Write L7 on the postcard for a free copy.

L8. Size and Weight Book

The 1949 Truck and Trailer Size and Weight Restrictions Booklet which includes the most up-to-date listing of laws affecting size and weight restrictions for commercial vehicles is just off the press.

The new booklet covers all of the 48 states and explains the differences between the laws of each.

Extreme diligence was exercised to eliminate errors in this compilation by securing the cooperation of responsible officials in each state who have checked and approved the laws in their respective states. The interpretation covers width, height, length for single units, tractor semi-trailers and combinations as well as minimum axle spacing. Weight restrictions are broken down for axle, wheel, and weight per in. width of tires.

Write L8 on the free postcard.

L9. Smooth Driving

This new edition of a booklet on highway safety will prove valuable to fleets in their driver training programs. Sixteen illustrated pages outline basic points of good driving, showing how to avoid common types of accidents.

The author emphasizes attitude, courtesy and sportsmanship in his common-sense approach to these road problems. In pithy, easily-read style he develops such subjects as Don't Rely on Your Brakes and Horn, Respect Train Crossings, Watch Your Signs, Check Your Speed, etc. Practical recommendations are provided on taking curves, driving on slippery roads, passing, night driving and scores of other traffic hazards. He emphasizes to the driver that he has five cars to worry about in driving—his own, the one ahead, the one behind, the one approaching, the one pulling out.

This is indeed a timely help to teaching driver responsibility. Write L9 on the free postcard for a copy.

NEW PRODUCTS

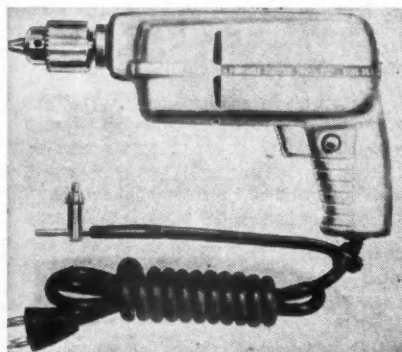


USE POSTCARD FOR MORE DETAILS

Illustrating and reviewing briefly many of the newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P166. 1/4-Inch Drill

A new, streamline design, 1/4-in. portable electric drill with an improved palm-grip handle with trigger switch, known as "Zephyr Model 1950," incorporates a fan-cooled, universal 110-115 volt, ac-dc motor.

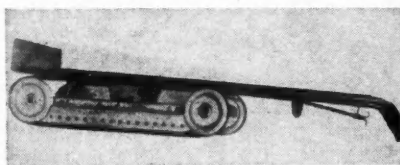


Other voltages are available. Housing, handle and gear case are die-cast aluminum. A built-in Cutler-Hammer trigger switch gives convenient, instant control. Drill is supplied with rubber-covered cord and attachment plug. Over-all length of drill is 8 1/8 in. and weight is 3 1/2 lb. Portable Electric Tools, Inc., Chicago.

P167. Crawler Truck

The new "Trak-Truk," for moving bulky loads up to 500 lb in weight over uneven surfaces, makes it possible to control movements with minimum physical effort.

The Trak-Truk moves on a crawler base or carriage equipped with continuous rubber belts. As a result, the



load is always carried on the belts; no metal ever touches the floor, stairs, pavement or ground. By retracting the crawler base, the truck may be operated on the lower wheels like any standard two-wheel hand truck, with the belts acting as tires. Cramer-Krasselt Co., Milwaukee, Wis.

P168. Undercoater

This truck underbody protective coating and sound deadener, trade-

named Penn Drake Auto Undercoater, is odorless and non-toxic. The material has an asphalt base combined with a heavy, non-abrasive filler and fast-drying solvent. Possessing good sprayability characteristics, it atomizes freely and may be applied under low air pressure with conventional spray equipment. The maker says it will not peel, crack, chip or blister under impact, vibration and temperature changes. Will not sag or run at heat to which car is normally subjected. Repeated washings do not impair its effectiveness. Pennsylvania Refining Co., Cleveland, Ohio.

P169. Drum Safety Jack

A new line of drum safety jacks features a spotting device which places the jack exactly in position for



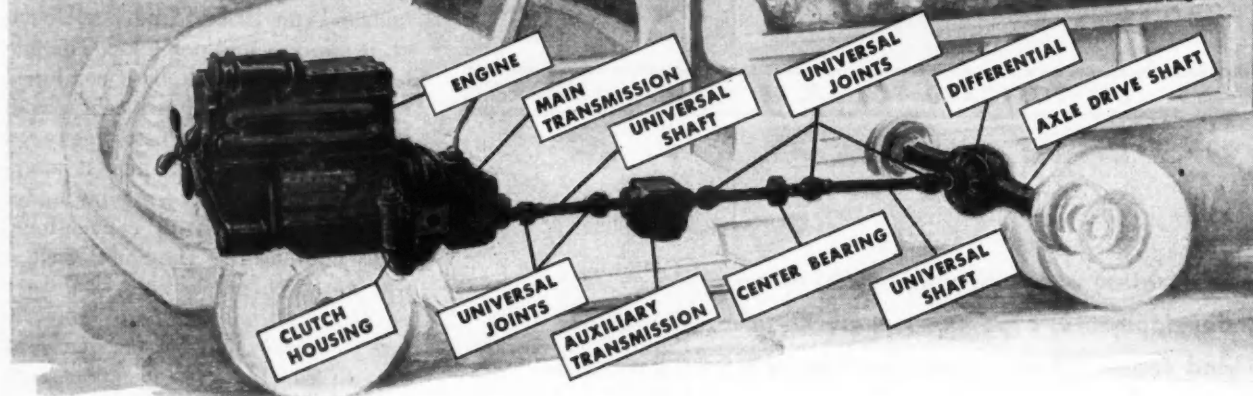
raising the vehicle when the wheel rolls onto the jack wheel dolly. Jack wheel dolly carries the full weight of tire and wheel at all times. Dolly is equipped with heavy rollers and mounted on a track integral with the jack. It does all the work of removing and replacing heavy wheels and tires—eliminating all manual handling. It is also removable for use

(TURN TO PAGE 52, PLEASE)

**NO GRAB!
NO CHATTER! NO BABYING!**

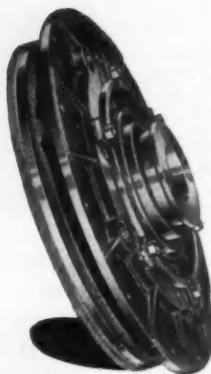
LIPE

TYPE ML
CLUTCH



PREVENTS SHOCK ABUSE OF Gears, Drive Shaft, Universal Joints, Axles and other Vital Points

No other clutch on the market gives you all the advantages of the Lipe ML Clutch. It drastically reduces maintenance and lay-ups . . . prevents a lot of wear and tear on your vehicle . . . and gives your driver easier control.



● **FOR NON-SHOCK
LOADING . . .
LESS MAINTENANCE
MORE HOURS ON
THE ROAD . . .**

**Always Use LIPE ML
Non-Shock CLUTCH!**

HAS ONLY ONE SPRING — It operates twenty levers simultaneously. All of them act on the pressure plate at the same instant.

RESULT—Uniform pressure . . . absolute parallelism . . . smoother engagement.

COOLER OPERATION — Throughout the clutch assembly, the 20 louvred levers act like a high-speed fan. They circulate cooling air while the clutch is in operation.

RESULT—Less heat . . . less pressure plate warpage . . .

EASIER ADJUSTMENT — When friction material wears down, you can easily compensate for it on the Lipe ML Clutch by removing shims from the cover plate. This adjustment does not affect the dynamic balance of the clutch.

RESULT—Restores torque capacity of clutch throughout the life of the friction material.

EASIER MAINTENANCE — You can disassemble and reassemble the Lipe ML Clutch with ordinary tools.

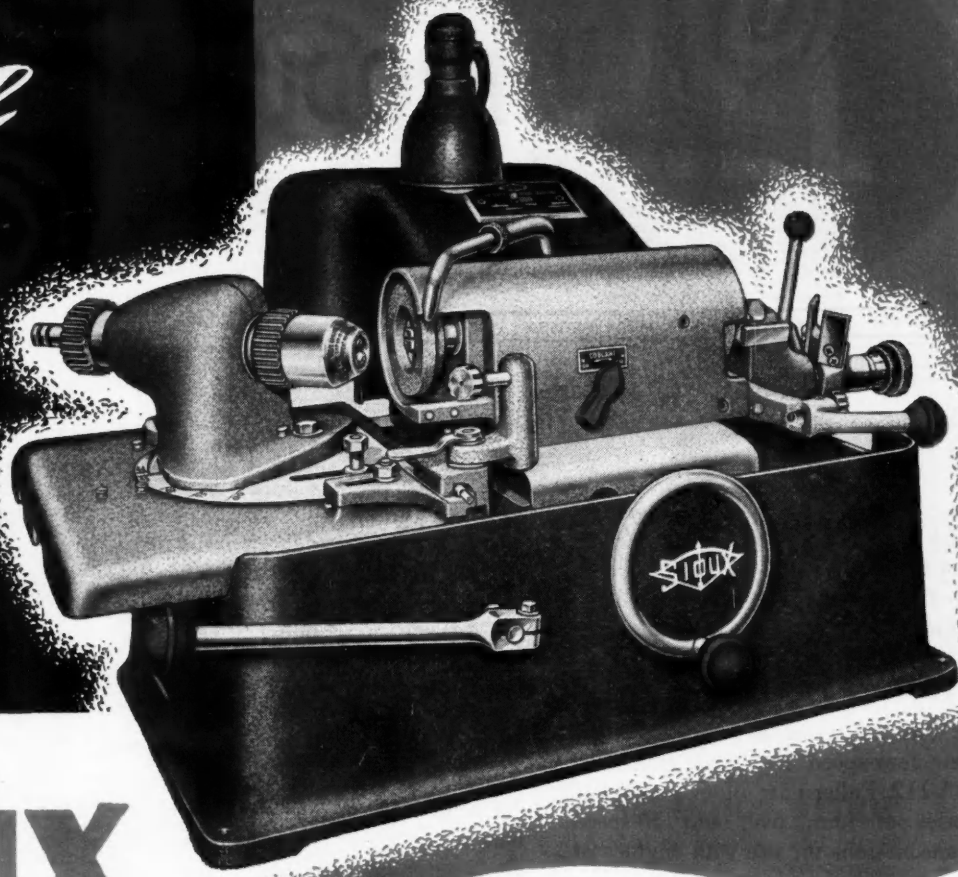
RESULT—You save considerable mechanics' time . . . put your vehicles back on the road more quickly.



Lipe - ROLLWAY CORPORATION SYRACUSE 1, N. Y.

Cable Address: LIPEGAR

More
\$\$\$
VALUE
than
EVER
BEFORE



SIoux

WET VALVE FACE GRINDING MACHINE

It Can't Be Beat!

NOW: Produce finest finish and factory precision because this wet grinding machine eliminates heat and distortion.

FEATURES: Wet Grinding for Valves 15°, 30°, 45°, 50°, 60°, and 75° Angle, and with Quick Acting Chuck Capacity $\frac{1}{4}$ " to $1\frac{1}{16}$ ", inclusive.

Wet Grinding built in. Reduces wheel dressing to a minimum.

Wet Grinds Valves, Valve Ends, Tappets and Rocker Arms.

Quick Acting Roller Chuck, Cap. $\frac{1}{4}$ " to $1\frac{1}{16}$ " incl., Valve diameter up to 4".

Automatic Chuck Stop.

Rigid grinding head with cage mounted precision ball bearings, permanently lubricated.

$\frac{1}{8}$ H. P. Capacitor start Motor, resilient mounted, absorbs vibration.

Removable coolant tank, for easy cleaning, 3-quart capacity.

Micrometer graduated feed.

Micrometer valve end grinding attachment with indicator gauge-head and Ford gauge pilots.

Beautiful two-tone grey hammertone finish.

Sold only through authorized SIOUX Distributors

STANDARD THE
ALBERTSON & CO., INC.



WORLD OVER
SIOUX CITY, IOWA, U. S. A.

NEW PRODUCTS



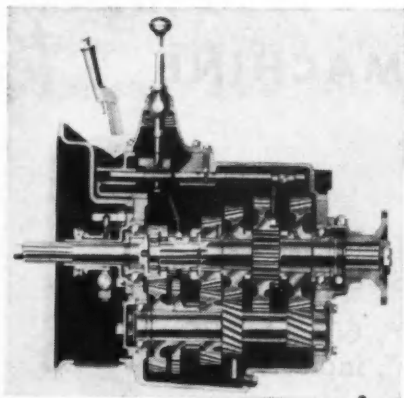
USE POSTCARD FOR MORE DETAILS

Continued From Page 49

as a carrier to move heavy wheels. Jack is manufactured in 5 sizes ranging from 1½ to 12 tons. The Cleveland Pneumatic Tool Co., Cleveland, Ohio.

P169A. Fuller Transmission

With the recent introduction of its new four-speed transmission, Model 4-A-112, Fuller now offers a complete series of four, five, and 10-speed transmissions for use with engines of up to 1120 cu in. displacement.



This newest Fuller transmission is designed for both on and off-highway applications where a high percentage of operation through gears in conjunction with auxiliaries is required.

Helical gearings is used in all four forward speeds. The helical gears, easily engaged by sliding jaw clutches, are said to permit easy shifting and reduce driver fatigue. Extra-heavy bearings are used throughout. Fuller Mfg. Co., Kalamazoo, Mich.

P170. Fire Extinguisher

A new line of 2½-gal resistance Welded Silicon Bronze fire extinguishers replace riveted and copper

fabricated units of the same capacity. They are soda-acid; foam; plain water; and anti-freeze water types.

Each lighter in weight by 4½ lb, the manufacturer claims them to be much stronger because the materials used have higher tensile strength. Additional features include resistance welded seams; welded hemispherical domes, tops and bottom; silver soldered elbow pads; projection welded hanger loop; new wider bottom handle; interchangeable caps, collars and gaskets; new spot welded name plates with identifying colors for each type unit. American-LaFrance-Foamite Corp., Elmira, N. Y.

P171. Six-point Sockets

Two series of sockets, designed with six point openings for difficult repair jobs where bolts or nuts can-

P172. Upper Cylinder Lubricator



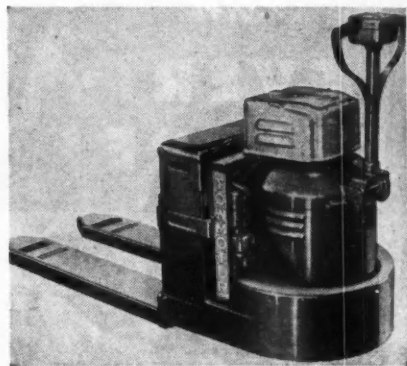
Improvements in engine operation are said to be made possible through use of a new type upper cylinder lubricator now available for all types and models of vehicles. The Ampco lubricator consists of an oil supply tank, a new oil dispersion head, line to the intake manifold, and an improved jet body fitted between the carburetor and the manifold.

A fine, steady oil spray is dispersed with the fuel supply through the entire manifold vacuum range. It is

not be turned because of undersize or rounded corners, are available in a variety of sizes. Sockets are standard length, have thin straight walls and are precision-made of chrome alloy steel. They have a lustrous Duro-Chrome finish. Duro Metal Products Co., Chicago.

P173. Electric Pallet Truck

A new battery-powered hand pallet truck features maneuverability in close quarters with a high safety factor even under maximum loads. Major features include rapid lifting of loads, high traction, maximum power,



safety handle with control buttons for either right or left hand operation, three-point suspension for smooth travel over uneven surfaces and differential-action trailer wheels, that eliminate wheel scuffing and insure easy turning, thus saving excessive wear on both trucks and floor.

(TURN TO PAGE 56, PLEASE)

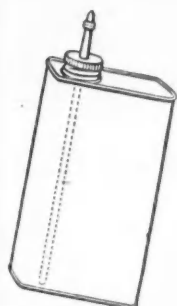
claimed this lubricant provides an oil seal throughout the upper cylinder section, thus improving compression and preventing fuel or power blow-by.

Feature of this new development is the fact that the oil spray is introduced on the first intake stroke and dispersed evenly to each cylinder. This is made possible by both the dispersion unit located on top of the supply tank and the injection nozzle which is designed to further increase the atomization of the oil before it enters the heat zone.

Lubrication on the intake stroke covers cylinder walls and rings. This seals the chamber on the compression stroke, according to the manufacturer, preventing crankcase dilution on the power stroke. The exhaust stroke serves to pass the dissolved combustion products out, keeping valves, rings and cylinder wall surfaces clean. Any good grade of top ring oil can be used in the unit. Reservoir holds a quart of lubricant, sufficient for 2000 miles of operation. Automotive and Marine Corp., Boston, Mass.



LOOSEN-ALL



Every pint can
a squirt-gun.

NEW and exclusive

The "squirt-gun" can makes hard-to-get-at places easy to reach. You squeeze—it squirts several feet! Supplied with every pint can.



Whiz Trademark Reg. U. S. Pat. Off.



PRODUCTS OF
Hollingshead
LEADER IN MAINTENANCE CHEMICALS

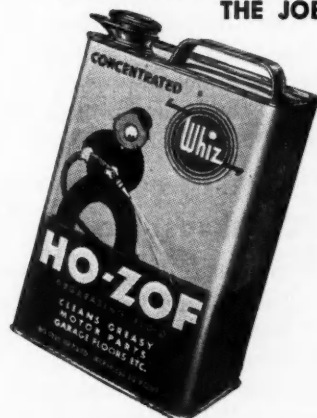


WHIZ MOTOR RYTHM

Added to gasoline and oil, it rids engines of power-wasting deposits of carbon, gum, sludge, and varnish . . . keeps oil free-flowing . . . keeps motors clean. Motor Rythm is the modern, chemical way to keep motors in tune.

Tune-Up

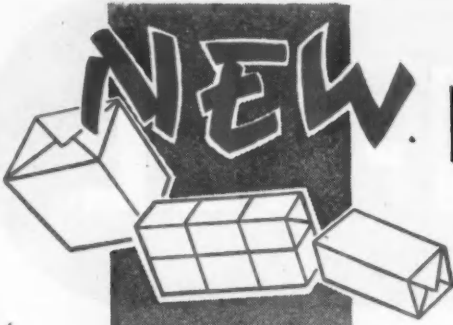
AND CLEAN-UP WITH
CHEMICALS MADE FOR
THE JOB!



WHIZ HO-ZOF

Concentrated solution for safely removing grease, oil, and grime from motors, tools, brake linings, floors, etc. Creates no inflammable, noxious fumes. Mix small portion with kerosene, then spray or brush on, allow to penetrate, and hose off with water.

NEW PRODUCTS

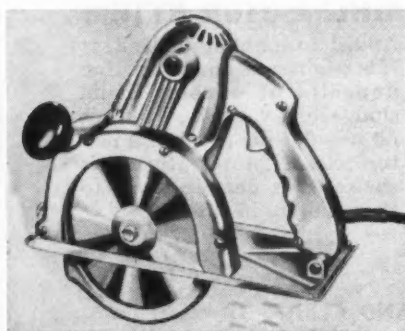


USE POSTCARD FOR MORE DETAILS

Continued From Page 52

P174. Portable Saw

The Cummins Balansaw with a 6-in. combination blade is available as a portable saw to speed wood working. Made of die cast aluminum alloy, it has a capacity of 1 $\frac{7}{8}$ -in. in wood. The Universal ac or dc motor turns up 3600 rpm. Saw is compact and weighs 11 lb. Gears are precision



cut, and anti-friction bearings are used. An automatic safety guard telescopes into frame to provide safety in usage. Cummins Business Machine Co., Chicago, Ill.

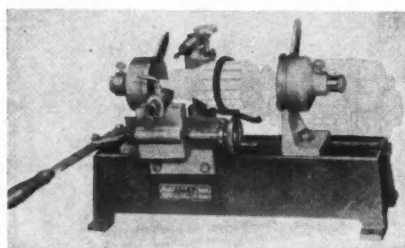
P175. Crankcase Vent

The Vacu-Vent is designed to ventilate the crankcase of the engine by removing liquid and gaseous impurities. It filters the vapors and then introduces the cleansed vapors into the intake manifold, where they supplement the regular fuel supply.

It consists of a housing, in which is incorporated an automatic air metering valve, a filter element and a glass-settling reservoir. Outlet port of the Vacu-Vent is connected by a piece of flexible tubing to the intake manifold of the engine. Motor Economy Products, New York, N. Y.

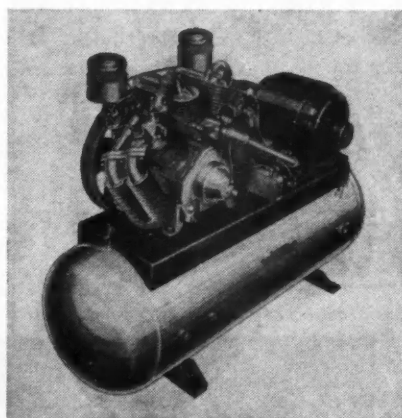
P176. Armature Lathe

Allen's armature lathe and under-cutter, Model E-139, features quick-adjusting, self-centering chuck jaws



which permit armatures to turn on own bearings thus eliminating run-out. The sturdy construction is claimed to rigidly support the tool and prevent any possible roughness or chatter. It will handle armatures up to 7 in. in diameter with maximum overall length of 16 in. Allen Electric and Equipment Co., Kalamazoo, Mich.

P177. Wayne Air Compressor, Model W-6308-H



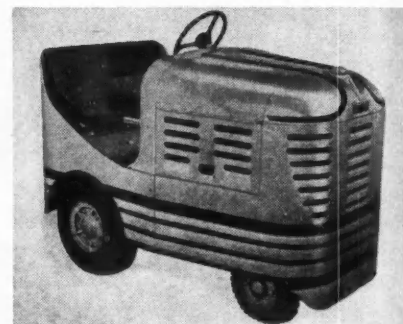
Wayne's new Model W-6308-H Air Compressor is available in 7 $\frac{1}{2}$ and 10 hp units providing, respectively, 30 and 40 cu ft displacement at 175 lb pressure and 37 and 50 cu ft displace-

P178. Cracked Block Repair

A low heat electrode is available for welding cast iron blocks. It is claimed that Eutectrode 24/49 may be used for on-the-spot repairs without any preheating or dismantling of equipment. Cracks, breaks, wear and defective areas are repaired without loss of time. The electrode is completely machinable through the weld and weld zone. It is as easy to use as a mild steel electrode, on ac or dc, straight or reverse polarity. Eutectic Welding Alloys Corp., New York, N. Y.

P179. New Clarkat Tractor

Full protection for tires on the wheels is provided by the new steering axle now standard on the redesigned Clarkat industrial towing tractor. Steering tread of the new axle has been reduced from 27 in. to



22 5/16 in., which permits the wheels to be turned to their extreme position within the body of the machine. Wheel wells around the tires have been reduced in dimension to provide (TURN TO PAGE 128, PLEASE)

ment as low pressure units (100 lb). Compressors are ruggedly built, four-cylinder, V-type, mounted either on bed-plate only or 80-gal tanks. Bore and stroke of low pressure cylinder is 4 $\frac{3}{4}$ in x 3 in. A centrifugal unloader to assure positive unloaded starting is standard equipment and a continuous unloader is optional. Compressors operate at slow speeds, only 490 rpm for the 7 $\frac{1}{2}$ hp and 650 rpm for the 10 hp. Two oil immersed automotive-type intake mufflers and filters are provided. Pistons are equipped with three compression rings and one oil control ring. Crankshaft is drop-forged steel with Timken roller bearings with external adjustment. Intake and exhaust valves of disc type are easily accessible and readily disassembled. The compressors are equipped for fully automatic operation with pressure control switch, pressure gage and across-the-line starter. The Wayne Pump Co., Fort Wayne, Ind.

**NEED
A TOOL?**

PHONE YOUR JOBBER!

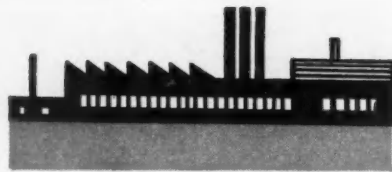
**...don't keep repair
jobs waiting!**

The right Tool completes the job FAST, and lets fleet vehicles roll ON TIME! Don't keep a job waiting, when the right Tool is lacking. Any and every New Britain Tool you'll ever need is no further away than a phone call to your automotive Jobber. You can count on him for fast delivery. And when the Tool is New Britain—you can count on it to be RIGHT. Don't keep repair jobs waiting on shop-to-shop Tool canvassers. Order New Britain from your Jobber—BY PHONE! TODAY! The New Britain Machine Co., New Britain, Conn.



New Britain

GREATER STRENGTH • BETTER FIT HAND TOOLS

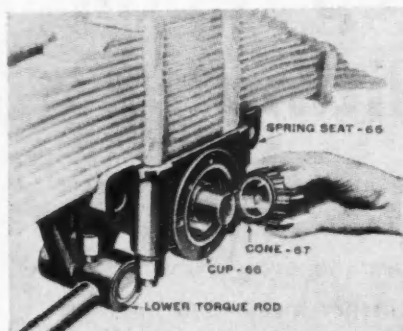


Factory Service news

Briefed for Fleets From
Manufacturers' Bulletins

**Autocar Spring Seat Bearing Adjustment . . . Chevrolet Pressure Radiator Cap Seal . . .
Diamond T Valve and Spark Timing . . . Federal Clutch Change . . . IHC Steering Gear**

Autocar Spring Seat Bearing Adjustment



To adjust the tapered roller bearings on the rear spring seat in Autocar trucks, raise the chassis until the spring ends clear the axle housings. Remove the bearing cap and after backing off the jam nut,

tighten or loosen the adjusting nut as required.

Adjust bearings to a drag of 20 to 25 ft lb, measured at the spring ends. Before replacing bearing cover, add grease as specified in manual.

Chevrolet Pressure Radiator Cap

Improper operation of the radiator overflow tank on 1948 models with a pressure type radiator cap may be due to improper sealing of the cap to the filler neck. This results in air being drawn into the radiator instead of a return of fluid through the overflow pipe from the overflow tank.

To overcome this trouble gasket Part No. 846689 has been made available. This will provide additional sealing. It is imperative that this gasket be installed in order to benefit from the overflow tank installation.

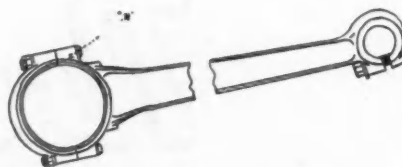
Diamond T Valve and Spark Timing

Timing gears in Continental engines are helical cut with timing marks prick-punched on both the crankshaft and camshaft gears as shown. When installing, mesh the teeth so that the marked tooth on the crank gear lines up between the two marked teeth on the cam gear.

If the distributor has been removed, turn the engine over so that No. 1 piston is coming up on compression, with the timing mark on the flywheel lined up with the bell housing timing hole. On the T6371 and T6427 engines, hold the distributor in position with the rotor pointing toward No. 1. Turn the rotor to the right a distance of two gear teeth to compensate for the spiral and then slip the distributor into place.

On the R6572 engine, hold the adapter in position with the slot in the distributor drive coupling offset toward the rear of the engine and pointing at No. 3 cylinder. Turn the shaft a distance of two gear teeth to the right to compensate for the spiral and then slip the adapter into place. Install the distributor in the adapter, and the rotor should point toward No. 1 cylinder.

Federal Connecting Rod Shims on JX Engines



Some time in the past Hercules removed the shims from all connecting rods. In order to identify rods that do not require shims, an identifying mark, the letter N, has been stamped on the rod. Note location.

(TURN TO PAGE 62, PLEASE)

"140,000 MILES ON ENGINE with only \$15 charged against it for maintenance," reports the *Blue Motor Coach Lines* of Louisville, Ky. "Before changing to Marathon V.E.P. Oil, we had to completely overhaul engines every 25,000 to 40,000 miles and replace valves, rings, and bearings at intervals of 10,000 to 15,000 miles. V.E.P. eliminated sludge and other troubles and *greatly reduced maintenance costs* due to longer engine life!"



Make an **18** hour run... with only **12** hours' engine wear

Want proof? You'll find it in big fleet experience with Marathon V.E.P. Oil for 11 years. You'll find it in scientific tests which demonstrated that V.E.P. makes engines last 50% longer than they would with ordinary oil, go 50% farther between overhauls.



Change to MARATHON V·E·P OIL

Check the "extras" you get with this different, patented, heavy-duty oil: V.E.P. (with its "magnetic-like" film) prevents *dry* starts. Stays put at high temperatures. Protects bearings against corrosion. Keeps engines clean, oil lines open, valves and rings free. Has triple-plus film strength for extra margin of protection against pressure and shock.

Let a Marathon Fleet Engineer tell you about our complete line of automotive oils and lubricants

THE OHIO OIL COMPANY

Producers of Petroleum since 1887

GENERAL OFFICES: FINDLAY, OHIO. DISTRICT OFFICES: ROBINSON, ILL., INDIANAPOLIS, IND.

COMMERCIAL CAR JOURNAL, March, 1949

Factory Service news

Continued from Page 60

Federal (Continued)

Clutch—Model 16

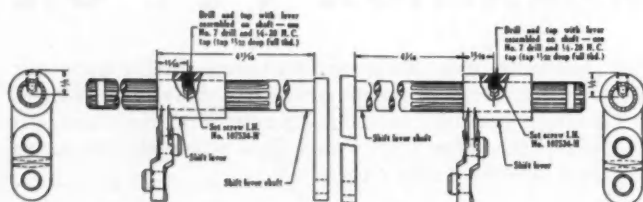
The 10-in. clutch (7D7775) used on Model 16, has been replaced with an 11-in. clutch (7D7781). This is the same clutch that has been used on Model 18.

Bearing and Valve Failures

Low mileage bearing and valve failures have been experienced in some operations in currently used engines. Investigations of these low mileage failures have disclosed the following causes:

1. Excessive engine speed, especially on over-the-road operations.
2. Use of lubricating oil of poor quality and improper grade; also, neglect of servicing the oil filter.
3. Misalignment of the rod in relation to the piston and misalignment of the bore for the bearing in the rod forging.
4. Improper ignition timing.
5. Engine operating coolant temperature not constant. Uneven operating temperature causes sludge and distortion, both of which are detrimental to bearings and valves.

International Harvester Transmission Shift Lever



If difficult shifting into either low or reverse speed gears is experienced with the HDS remote control transmission, it is possible that the transmission yoke or shift lever is binding on the shift lever shaft.

Correction can be accomplished by locking the shift lever

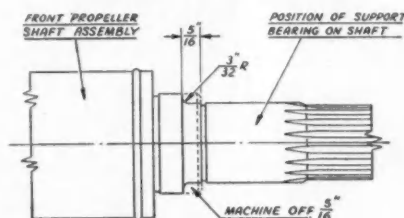
to the shift lever shaft. This will, upon selection of either low or reverse gears, permit the shift lever shaft to slide in its bore in the transmission shift lever housing instead of the shift lever sliding on the shift lever shaft.

Steering Gear Assembly

On the KB-1 and KB-2 models the IH Model TA-12 steering gear assembly will replace the present IH Model T-12 for both production and service requirements. This change will improve vehicle maneuverability and lessen steering effort.

Studebaker

Propeller Shaft Support Bearing Kit



On M15A and M16 trucks so equipped kit No. 678889 is available containing improved propeller shaft support bearing parts. Installation will assure

longer life and trouble free service of the bearing assembly.

To install the new parts it is necessary to press off the bearing assembly. Place the propeller shaft in a lathe and machine 5/16 in. from the large section of the shaft where the old style front dust shield was installed. Shaft diameter of 1.3779 to 1.3784 should be maintained. The new dust shield will be pressed onto this section.

Throttle Control Bell Crank—2R16, 2R17

Should a loss of power be experienced with these model trucks, the throttle should be examined to see that the throttle valve will open completely when the accelerator is depressed.

The bellcrank may move upward in the coil-to-cylinder bracket, resulting in a loss of throttle rod travel. This condition can be corrected by drilling a 7/64-in. hole 1/4 in. below the center of the original cotter pin hole in the bellcrank and installing an additional cotter pin in the new location.

Rear Wheel Grease Seal—2R10

The rear axle on the 2R10 is so designed that only one seal grease is required in the rear hub assembly. A self-contained leather seal, Part No. 677318, is available for replacement. This part eliminates need of the metal washer, felt washer and outer retaining metal washer used in production.



Fleet Use of Body Finishes Annually Averages 3/4-GAL PER VEHICLE

Average fleet buys 258.31 gal of various finishes, which averages .786 gal per vehicle per year; prime coat and thinner consumption averages .692 gal, protective finishes .149 gal, per vehicle per year. Spray gun with central air pressure system and spray booth with air exhaust leading equipment used

Analysis by A. W. GREENE, Managing Editor, Commercial Car Journal

THE AMOUNT of paint and related products consumed annually by a fleet tells an interesting two-fold story about its operation and maintenance practices.

First, it indicates the extent and quality of the refinishing work. If the entire fleet is repainted annually, for example, more paint naturally is consumed than if it is repainted every two or three years; if the paint is sprayed for good coverage, more is consumed than if the vehicle gets a "lick—once over lightly."

The amount of prime coat used shows whether the fleet's practice is to strip the old finish to the bare metal or just to sand off the glaze. The amount of varnish, clear lacquer and polish used may show if, and to what extent, fleets endeavor to preserve the vehicle's finish between repaint jobs.

From the operation angle, high consumption of paint and related vehicle refinishing products may point to abuses in vehicle handling. The shop may be working overtime to keep the fleet looking at its best, touching-up abrasion marks caused by careless parking or backing up to loading platforms. The slamming of the rear doors against the side of the truck body, or against the body of the next truck at the platform, striking of cab doors against the front fender of the truck parked alongside, scratches caused by driving too close to overhanging trees, are but a few of the many other reasons why the shop paint consumption may be abnormal.

It's not so much the cost of the paint, it's the labor cost and vehicle time loss, that may make a paint consumption study pay off. A good guide for this purpose will be found in Tables 1 and 2.

How Much Paint do Fleets Use Annually per Vehicle?

Q. "How many gallons of enamel, lacquer and paint do you use per year?"

A. 214.98 gal Enamel, 209.40 gal Paint, and 88.53 gal Lacquer.

Table 1

VOCATIONAL GROUPS	Total Number Fleets Reporting	Total Number of Vehicles Reported	ENAMEL Average Gal. per Fleet	LACQUER Average Gal. per Fleet	PAINT Average Gal. per Fleet	Gallons of Finish per Vehicle per Year
FOR-HIRE CARRIER.....	22	5,646	174.69	51.17	109.50	.666
FOOD DISTRIBUTION.....	29	9,500	178.75	47.50	53.75	.589
GOVERNMENT.....	43	14,727	234.06	147.63	130.25	.841
CONSTRUCTION.....	8	915	89.29	15.00	37.50	.798
INDUSTRIAL.....	2	182	30.00		85.00	.632
PETROLEUM.....	6	1,933	457.50	23.50	100.00	1.074
PUBLIC UTILITY.....	16	10,549*	229.38	76.33	53.25	.346
RETAIL DELIVERY.....	17	1,665	116.33	48.50	65.00	1.072
TRUCK RENTAL.....	7	4,042	307.86	32.50	1207.50	1.760
TRUCK AND BUS FLEETS, MIXED.....	5	1,788†	513.00	.....	450.00	1.686
TOTAL AND AVERAGE..	155	50,947	214.98	88.53	209.40	.786

* Includes one fleet operating 64 buses.

† Includes 1435 buses.

3/4-Gal Finish per Vehicle per Year

OF THE fleets that do their own refinishing, 155 buy 40,038 gal annually of the various finishes used. These fleets operate 50,947 vehicles of all kinds. On a per vehicle basis, this averages .786, or better than 3/4-gal per year, as shown in the last column of Table 1.

A surprisingly large number of fleets exceed this average by about a gallon. Most of these fleets are to be found in one of four vocational groups. They are vocations where vehicle use admittedly is hard. However, within those

COMPOSITION OF VOCATIONAL GROUPS as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Operators in Local and Over-the-Road Service.

FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.

GOVERNMENT—State, County, Municipal, and Federal fleets.

CONSTRUCTION—Builders, Quarries, Gravel fleets.

INDUSTRIAL—Fleets operated by manufacturers.

PETROLEUM—Production and Distribution fleets.

PUBLIC UTILITY—Gas, Power, Water, and Telephone fleets.

RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.

TRUCK RENTAL—Agencies leasing motor trucks

TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

Annual per-Vehicle Consumption of Other Finishing Materials

Q. "How many gallons of prime coat, thinner and finish protective materials do you use per year?"

A. 119.09 gal Prime Coat, 193.21 gal Thinner, 53 gal Polish, 91.91 gal Varnish, and 92.60 gal Clear Lacquer.

Table 2

VOCATIONAL GROUPS	Total Number Fleets Reporting	Total Number of Vehicles Reported	PRIME COAT Average Gal. per Fleet	THINNER Average Gal. per Fleet	POLISH Average Gal. per Fleet	VARNISH Average Gal. per Fleet	CLEAR LACQUER Average Gal. per Fleet	Gallons of Prime Coat and Thinner per Vehicle per Year	Gallons of Protective Finishes per Vehicle per Year
FOR-HIRE CARRIER	22	5,646	85.54	104.87	10.00	112.29	25.00	.476	.148
FOOD DISTRIBUTION	29	9,500	99.19	113.31	41.60	27.50	34.50	.504	.070
GOVERNMENT	43	14,727	114.10	200.67	34.06	16.25	10.50	.697	.051
CONSTRUCTION	8	915	46.67	48.33	20.00	26.00	15.00	.623	.095
INDUSTRIAL	2	182	20.00	30.00	27.50	25.00	11.00	.440	.049
PETROLEUM	6	1,933	190.00	239.00	25.50	25.00	11.00	1.111	.049
PUBLIC UTILITY	16	10,549*	82.00	144.08	22.60	4.75	21.33	.249	.030
RETAIL DELIVERY	17	1,685	45.69	75.22	13.00	28.67	508.33	.763	.068
TRUCK RENTAL	7	4,042	343.57	92.50	325.00	825.00	508.33	1.968	1.107
TRUCK AND BUS FLEETS, MIXED	5	1,788†	387.50	337.50	.....	150.00	.....	1.622	.084
TOTAL AND AVERAGE	155	50,947	119.09	193.21	53.00	91.91	92.60	.692	.149

* Includes one fleet operating 84 buses.

† Includes 1435 buses.

groups are fleets having good-looking, well maintained vehicles on which only $\frac{3}{4}$ -gal of finish, some even slightly less, is used to keep them ship-shape. It would appear that these fleets either have superior drivers or driver control is better than average.

Of course, some of the fleets in the high consumption vocations cannot control the drivers of their vehicles, even if they wanted to—such as some of the truck rental fleets. Also, in the case of petroleum products haulers, the products themselves are detrimental to the finish. Complete elimination of spillage may be impossible.

Looking at the problem from a business viewpoint, an interesting conclusion may be drawn. Fleets that refinish or spot-finish their vehicles oftener than the average fleets, apparently find it a paying proposition. The added prestige and possible sales volume gain obtainable by having vehicles looking their best appears to offset the extra paint costs.

The relationship between finishes used and priming coats is shown in Table 2. This table also shows the consumption of finish protection coatings, which appear to have a bearing on finish consumption.

The relatively small amount of prime coat used checks the accuracy of a previous survey which showed that the majority of fleets did not strip off the old finish to the bare metal. An endeavor was made to determine if the finish coats were thinned according to paint manufacturers' recommendations. Because some fleets were not specific, it was not possible to do this accurately but, from the evidence on hand, it seems that the recommendations are being observed. The total consumption of prime coatings and thinners total was reported to be 35,275 gal, or an average of .692 gal per vehicle per year.

The total consumption of finish protective coatings—varnish,

clear lacquer and polish—was reported to be 7586 gal, or .149 gal per vehicle per year. It is interesting to note that some of the fleets that use more than the average amount of finishes, use less than the average amount of finish protective coatings. It would seem that it might be worth while for these fleets to make an experiment to increase the amount of finish protective coatings, which are less expensive and easier to apply than finish coats, to determine if the consumption of finish coats could be reduced.

Air Pressure from Central Systems

PREVIOUS analyses of fleet vehicle refinishing practices have shown that most fleets apply vehicle finishes with a spray gun. Table 3 shows that three types of air supply are in use, with the central system in the lead.

It will be noticed that the total of the first three columns in this table exceeds 100 per cent, indicating that auxiliary compressors are used by a number of fleets—probably to insure good results when demands on the central compressor exceeds peak capacity.

Over half of the reporting fleets report having spray booths, the majority of the basic air exhaust type.

Of the other equipment reported, 21 per cent of the fleets have separate touch-up outfits, eliminating the need of handling small jobs in the spray booths or main refinishing areas. Mechanical paint strippers are used by 14.65 per cent, 8.92 per cent use overhead hoists to facilitate shifting, raising or replacing bodies on chasses. Drying lights are used by 7 per cent of the reporting fleets.

The concluding part of this survey, dealing with refinishing costs and hourly rates paid painters, will be published in the April issue.

Major Equipment Used in Fleet Paint Shops

Q. "Check any of the following paint shop equipment that you may have." (List supplied.)

A. Spray Gun with Central Air Pressure system 63.06%, Spray Booth with Air Exhaust 40.04%, Touch-up Outfit 21.02%, Paint Striper 14.65%.

Table 3

VOCATIONAL GROUPS	Number of Fleets Reporting	SPRAY GUN WITH			SPRAY BOOTH WITH			Touch-up Outfit	Paint Striper	Hoist	Drying Lights
		Central Air Pressure System (Per Cent)	Stationary Compressor in Paint Shop (Per Cent)	Portable Compressor (Per Cent)	Air Exhaust (Per Cent)	Air Heater (Per Cent)	Water Curtain (Per Cent)				
FOR-HIRE CARRIER	19	78.95	47.37	15.79	47.37	10.53	.....	10.53	10.53	.....	5.28
FOOD DISTRIBUTION	29	48.28	48.28	13.79	41.38	3.45	6.90	13.79	20.69	.....	.....
GOVERNMENT	47	57.45	57.45	46.81	53.19	4.26	2.13	21.28	14.89	14.89	8.51
CONSTRUCTION	8	62.50	37.50	50.00	37.50	12.50	.....	12.50	.....	.....	.....
INDUSTRIAL	1	100.00	.....	.....	100.00	.....	.....	.....	.....	.....	.....
PETROLEUM	6	66.67	50.00	16.67	66.67	16.67	.....	33.33	33.33	16.67	.....
PUBLIC UTILITY	18	77.77	22.22	22.22	44.44	22.22	.....	22.22	11.11	11.11	11.11
RETAIL DELIVERY	15	53.33	40.00	13.33	46.66	13.33	6.67	33.33	13.33	13.33	6.67
TRUCK RENTAL	6	50.00	50.00	16.67	33.33	33.33	16.67	50.00	16.67	33.33	.....
TRUCK AND BUS FLEETS, MIXED	8	100.00	37.50	25.00	75.00	12.50	.....	25.00	12.50	.....	37.50
TOTAL AND AVERAGE	157	63.06	45.86	27.39	49.04	10.19	3.18	21.02	14.65	8.92	7.00

LINK with LAB

Promotes Better Operation

Fleet's experience with outside laboratory shows what can be accomplished by professional analysis of failures. Findings reveal structural defects, driver abuses, improper maintenance



By Ralph F. Berndt

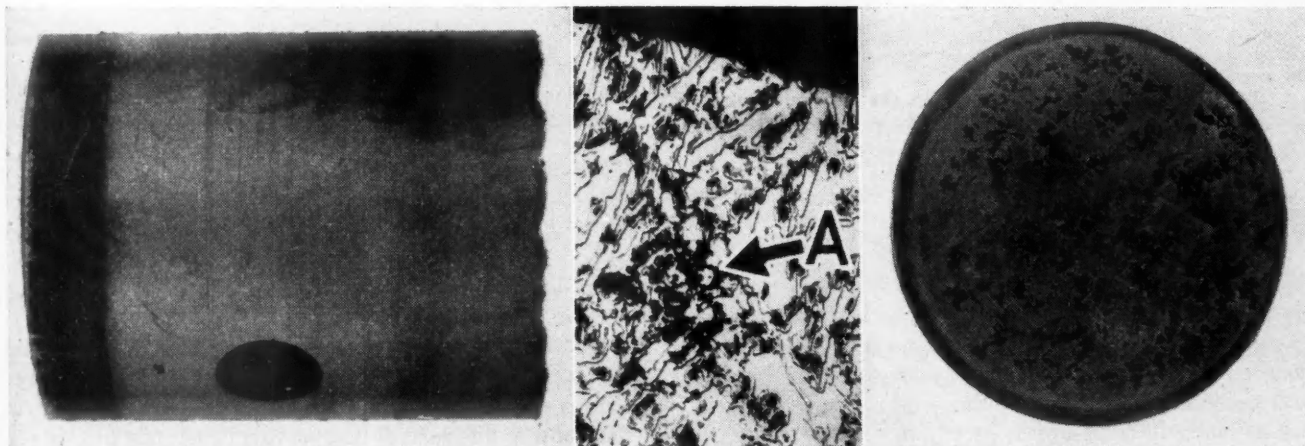
General Mgr., Rio Grande Motorway,
Denver

IN THE FEW YEARS we have been depending upon a scientific laboratory to take the guesswork out of motor truck operation, I have kept a file of the findings. The labora-

tory is most obliging in illustrating its observations by photographs, making it easy for even the layman to understand why machinery sometimes fails unexpectedly. A few of these reports are reproduced on this and following pages, just as they came from the lab.

Not all the tests supply information by which we can immediately profit and save, although economy of operation is the ultimate objective of each. Sometimes an analysis merely confirms a deficit in manufacture which

(TURN TO NEXT PAGE, PLEASE)



Sample Laboratory Report—Over-Annealed Camshaft Follower

The laboratory received a cast iron camshaft follower from a Rio Grande Motorway unit. The pits shown in right photo are the result of slight wear on the follower and represent the regions formerly occupied by free graphite in the cast iron.

The surface of this follower had a Brinell hardness of 560 which was obtained by pouring against a chill. A micro study was made of a section thru the chilled end and it was found there was considerable free graphite in the chilled zone. As the

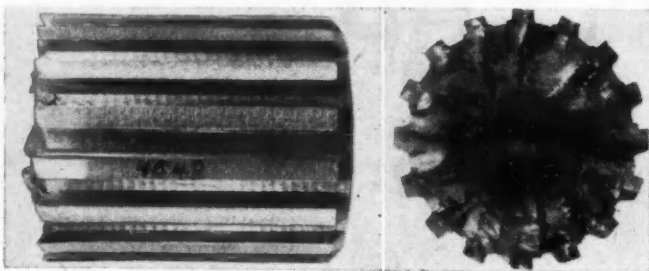
graphite was nodular type it was formed in an over annealed chill. The presence of temper carbon ("A," center photo) indicates the chilled zone was over annealed. The hardness of such a casting was reduced slightly and the wear resistance considerably, as the graphite so released is readily removed from the metal.

The pits formed are the results of the removal of temper carbon formed by over annealing the chilled zone.

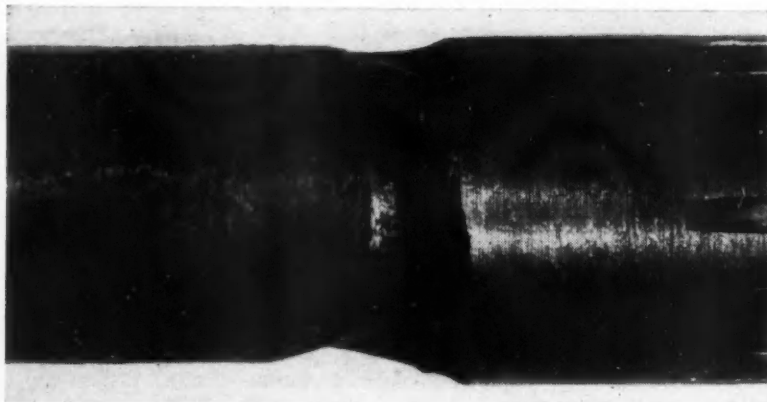
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Continued from page 67

Torsional Shaft Failure



The laboratory received a piece of the spline end of a drive shaft which failed. A study of the surface showed the failure to have been caused by torsion. There was no evidence of any cantilever effects which would indicate misalignment. Therefore failure is regarded to have been caused by a torsional overload.



Fatigue Failure of Drive Shaft

This drive shaft failed at the base of the fillet at the spline end of the shaft. No information relative to the part or failure was received.

A study of the failed section showed the fatigue crack to have its origin at the base of the fillet of the drive shaft. This

we had already suspected; again, it may fail to turn up any fault whatever in parts being checked. Occasionally, findings by the metallurgist, the chemist or other technicians prove extremely revelational, and it may be that the trouble has been caused either by ignorance or carelessness upon the part of our own personnel.

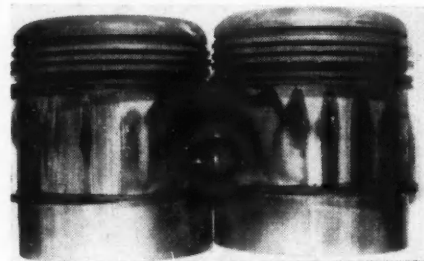
Behind many of the laboratory cases is a lengthy story, a story perhaps of a disabled truck on a mountain road in sub-zero weather, a story of a chronic type of breakdown which mechanics should have understood but didn't; or that of the simple error of somebody forgetting to fill a radiator.

In any case we have information upon which to act, and thereafter there is no excuse for making the same mistake again. If the trouble does lie with the manufac-

Sample Laboratory Reports

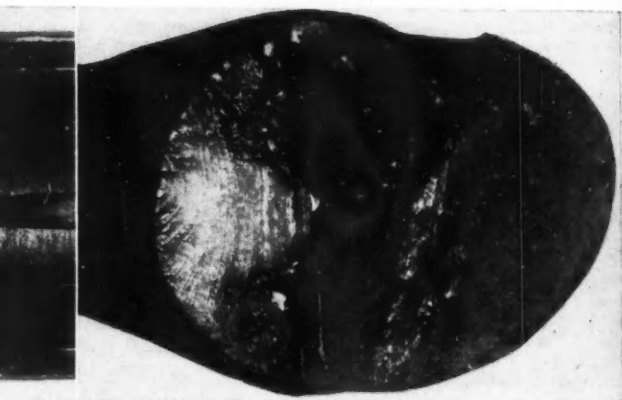
Scored Pistons

The engine from which these pistons were taken was assembled with an excessive piston clearance to save using new liners and pistons. At 300 deg F the pistons would just begin to bear on the cylinder walls as a result of expansion; however as shown in the photograph below the temperature was high



enough to give actual scoring. The appearance indicates an oil temperature of over 450 deg F.

In other words the engine was run without water and but for the excessive initial clearances would have been more extensively damaged.



fatigue crack progressed through 40 per cent of the drive shaft and then failed the remaining 60 per cent through torsion.

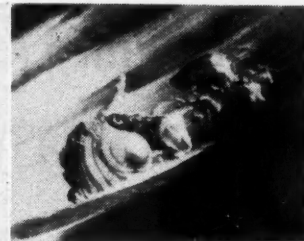
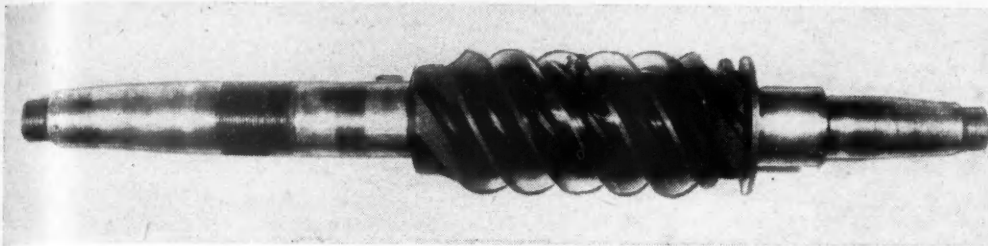
Failure was caused by the development of a fatigue crack at the base of the fillet on the spline end of the drive shaft.

turer we can confidently present our case, suggesting needed modifications.

Our company is fortunate in being affiliated with the Denver & Rio Grande Railroad. As the railroad maintains a complete laboratory for testing its products, it is naturally to this service that we turn when our mechanics can't explain breakdowns. But many fleets will find similar tie-ins and all can make use of the services of independent laboratories. The cost is surprisingly little when compared with the results obtained.

I might add that we purchase few products now without first submitting samples to the laboratory for testing. The procedure causes some delay in the purchasing department, and it is also irritating to salesmen. Sales

(TURN TO PAGE 70, PLEASE)



Improperly Heat Treated Worm Gear

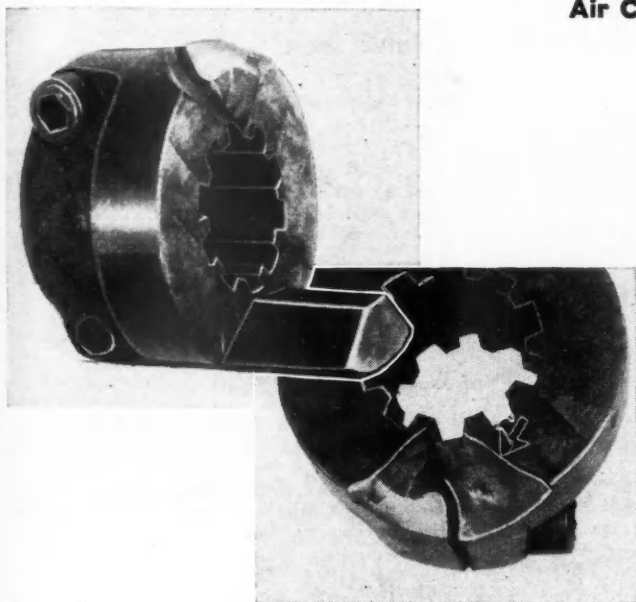
A failed worm gear was sent to the laboratory for investigation. This gear was removed from a diesel unit having a tandem axle. The failure was characterized by shelling out along the faces of the helices (right photo). All of these shelled regions, while in different stages of progress were approximately the same distance from the starting point of worm and gear contact. The shelled areas were always on the same side of the helix. The nature of the failure was of fatigue apparently being caused from the hydraulic action of lubricant on the steel.

A Rockwell hardness survey was made along the top of the five helices, in a circumferential pattern. One pattern being where the gear first engages the worm, one in the shelled region and one where the gear disengages the worm. These results were tabulated and were made on the top of the helix where

no wear had occurred. The values found indicate that the shelled region was softer than the two ends. It is believed that this center-softness was caused by some irregularity of the heat treatment of this gear.

Due to the size of the part and the hardness of the material we were unable to section this gear in its present condition and therefore we were unable to determine the depth or nature of heat treatment.

Failure was caused by the shelling out of one helix at the contact region of the axle gear. This region was found to be softer than either end of the same helices and this lack of hardness of the contact zone was believed to have been caused by an irregularity in the heat treatment of the gear. This is considered to be a manufacturers defect.



Air Compressor Drive Coupling Failure—a Design Problem

The laboratory received an air compressor drive coupling which failed by shearing off at the lugs. No other information was received except that this part had numerous failure occurrence.

Failure starts as a fatigue failure at the small filleted shoulder of the lug and progresses until the crack has progressed sufficiently that the remaining metal fails in sudden shock. This type of failure is caused by the coupling becoming slightly worn on the shaft. This slight bit of play plus the sudden grabbing action of the air compressor when it starts operation produces an impact load on the lugs. The load acting on the lug with cantilever beam effect applies the maximum bending moment at the base of the lug. This base is unprotected by any appreciable sized fillet and the result is a fatigue crack at the base of the lug.

This type of failure could be prevented or reduced in frequency by checking the coupling frequently to insure absolute tightness on the air compressor shaft. The other alternative is to work with the part manufacturer and request a change in design to introduce a small fillet, 1/16 inch for example at the base of the lug to eliminate this corner acting with sharp notch effect.

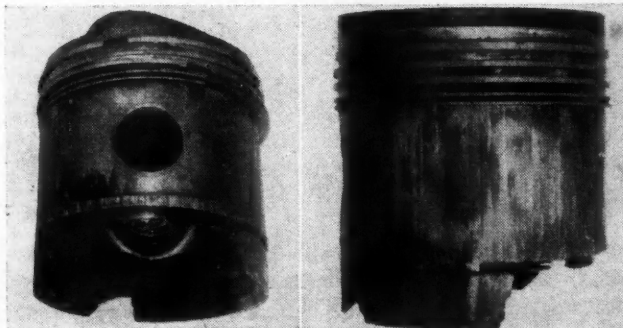
Failure is caused by the location of a sharp corner at the base of the lug which is subjected to sudden impact loads.

Cracked Piston Skirts

The laboratory received one of five pistons which failed on Unit 573. The skirts on five of the six pistons had cracked similar to the one which was sent to us for investigation.

The failures were characterized by scouring of the piston walls and the breaking off of the skirt under the wrist pin holes. The pistons which failed were fitted with circular section wrist pin keepers 0.093 in. in diameter while the sixth piston was fitted with a rectangular cover which was pricked punched into position.

The room temperature length of the wrist pins was 4.468 in. which lengthened 0.0072 in. at 300 deg F operating temperature. This is based on an expansion of steel of 0.000007 in. per inch per deg F. These pins were in 5 1/4 in. pistons set at 0.008 in. clearance. In the piston which did not fail, the rectangular cover gave sufficient end clearance so that the thermal expansion was absorbed by the clearance. The other pistons lacked sufficient end clearance so that the expansion of the wrist pin was against the circular wrist pin keepers. This

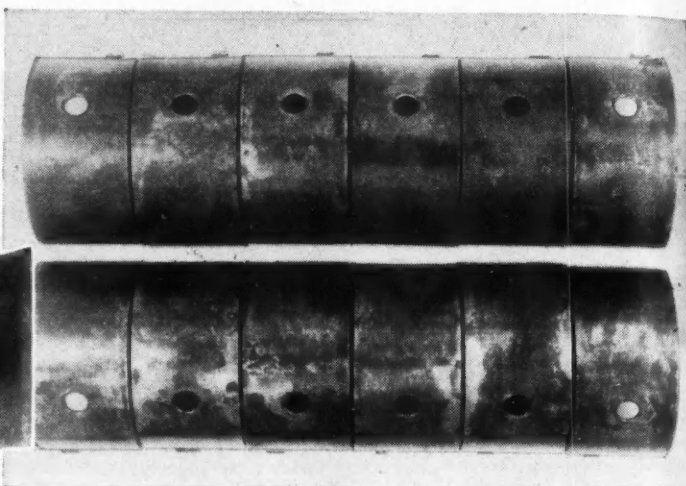
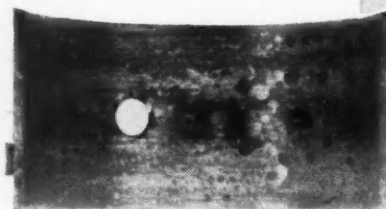


expansion was transmitted to the piston walls which became scoured in some regions and where the pressure was more intense the skirts of the piston bound and broke off.

Failure was caused by insufficient clearance between the wrist pin keepers and the end of wrist pin.

LINK with LAB . . .

Continued from Page 69



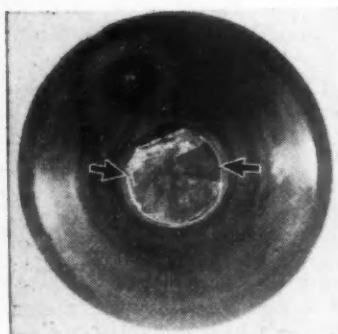
Bearings Show Lack of Filtration

The large photograph above shows the back of a set of bearings from unit L-24. It shows very poor back contact. The smaller picture shows the face of one bearing (they are all alike). The added material is fine iron.

This condition is also illustrated in the Federal Mogul manual

on page 44, Fig. 4-13. The following have these manuals: Denver engine room lead foreman and superintendent at Alamosa, Grand Junction, Salt Lake City, Durango and Salida.

This condition (large amounts of fine iron particles) can be remedied by better filtration and cleaning the engine better when it is overhauled.



Fatigue Cracks in Valve Stem

The laboratory received this failed valve stem from the Rio Grande Motorway. This valve failed from the development of two major fatigue cracks (see arrows), starting on opposite sides of the valve stem and progressing toward each other on the same plane until they met.

Failures similar to this one in the valve stem could be detected in the early stages by some means of fluorescent penetrant inspection such as Zyglo. Magnaflux is impractical due to the non magnetic characteristics of the metal. Detection would mean scrapping the part but it would assist in the prevention of such failures causing road failure and subsequent delay and tow-in. Such inspection if the part is clean can be done in 6 hours per set of valves.



Crankshaft Lacks Proper Endurance Limit

A failed crankshaft was sent to the laboratory for investigation as to the cause of failure which occurred at the fillet region of the rear end of the No. 6 throw of the crankshaft (see photo at left)

The failure was of a fatigue nature due to a cyclic stress above the endurance limit of the steel in magnitude and repeated for a sufficient number of times to cause failure. Sharp notches, insufficient fillets, etc., act as stress raisers and raise the stress level of the member locally so that in the localized regions it is above the endurance limit of the material.

This crankshaft had a 3/64 in. fillet on the throw that failed. This seems very small and inadequate. A larger fillet would reduce the effective bearing length somewhat but this would be overcome by using internal fillets. The main bearing and region surrounding the failed surface had a Rockwell Hardness of C-32. This is equivalent to a Brinell Hardness of 297 and tensile strength of 144,000 psi. We have no criterion of how this should compare with the manufacturer's specifications for this part.

Failure was of a fatigue nature at the fillet of the throw. This fatigue failure was materially accelerated by the inadequate fillet in this region. We would suggest a more generous fillet on the throws to reduce the stress concentration value of the present-size fillet.

representatives frequently explain to us that the product has already been tested in the manufacturer's laboratory. Our stock reply to this line of talk is, "Then you won't mind if our laboratory also runs a test on it, will you?" This policy not only shortens discussions with salesmen, but avoids the expensive trial and error method.

A salesman who was introducing a new liquid soap called on us. He was glowing with zeal about his product. When the laboratory report came back it bore out the

salesman's assertions. The soap was excellent but "only about a nickel's worth of soap per gallon of water."

We even run tests on standard motor fuels and lubricants which we use extensively. Occasionally we find something wrong. A few months ago an undesirable ingredient was found in a delivery of gasoline. Investigation uncovered the fact that the gasoline was delivered in a tank truck which had been used in delivering fuel oil and had not been properly cleaned.

FORM #100 (JUNE 48) TRUCK NO. 36

DRIVERS DAILY REPORT

DATE 4 DEC 48

GASOLINE GALS. 6 SPEEDOMETER-IN: 89906

OIL QTS. 0 SPEEDOMETER-OUT: 89950

MILEAGE - TODAY: 56

Is Your Truck OK? If Not.....

Check items below in need of repair or replacement!

BRAKES	BATTERY
LIGHTS	MOTOR
HORN	CLUTCH
WINDSHIELD WIPER	MUFFLER
MIRROR REAR VIEW	STICKER ON TRUCK
Tires	SHOWS - 1000 MI INSP.

Check here if DUE
Vehicle is OK NOW!

BUNDLES OUT: _____ REWASHES: _____ TIME OUT: _____

BUNDLES IN: _____ CLAIMS: _____ TIME IN: _____

NOTE: THIS REPORT MUST BE FORWARDED TO YOUR ROUTE FOREMAN OR OFFICE DAILY BEFORE LEAVING PLANT SO THAT WE CAN FOLLOW UP ON REPAIRS REPORTED: OIL CHANGES AND GREASING.

AS DRIVER OF YOUR VEHICLE IT IS YOUR RESPONSIBILITY TO KEEP YOUR TRUCK IN 100% OPERATING CONDITION. ANY REPAIRS OR REPLACEMENTS REQUIRED WILL BE LISTED ABOVE SO THAT NECESSARY AND PROMPT ATTENTION CAN BE EFFECTED.....

YOU DO YOUR PART SO WE CAN DO OURS

--The Management--

I have completed all necessary entries:

SIGNED: Joe Busch 33
(DRIVER'S NAME) ROUTE

15-Minute Cost System

Part-time system combines PM control with shop cost data, keeps shop posted on truck performance, supplies management with cost of each truck

By Wm. Roche

Cost Clerk, Archer Laundry, Chicago, Ill.

Form #110 (Feb 48) 1000 Mile Inspection and Service Record TRUCK NO. 38

MILEAGE 89906

DATE 4 DEC 48

Use these marks: ✓ Satisfactory, x - Adjusted, xx - Rep'd or Replaced.

ROAD TEST (on first 7 items only)

1. Before Operation Inspection: Check oil, water, gas, tire pressure.
2. Horn, Mirrors, Windshield Wipers, Dash Instruments: speedometer, etc.
3. All Lamps, lenses, lighting, wiring
4. Brakes: foot, hand.
5. Clutch: play, grab, noise.
6. Steering: play, shimmy, side-pull, bind, wander.
7. Ignition: timing.

ENGINE, ACCESSORIES, CHASSIS, BODY & ATTACHMENTS, (in Garage)

8. Spark Plugs: gaps & deposits.
9. Battery: cables, hold down, (Show reading) 12.48
10. Crankcase: leaks, oil level. +100
11. Radiator: water pump, fan, belt, hoses, (Show anti-freeze reading).
12. Oil Filters: lines, - Air Cleaner: carburetor.
13. Generator: starter & switch.
14. Tires: pressure, rotation.
15. Shock Absorbers & Links.
16. Wheels: bearings, seals.
17. Brake Master Cylinder: fluid, leaks, vent, switch.
18. Hood: hinges, fasteners, - Bumpers: - Exhaust Pipes & Mufflers.
19. Complete Vehicle Lubrication, Qts Oil used: 6, lbs. Grease: 1.
20. Inspecting & Servicing Mechanics initials: CC Time required: 3 hrs.

REMARKS & RECOMMENDATIONS: Replaced oil cartridge 65

NEEDS NEW POINTS 5.16

All entries, adjustments, repairs & replacements completed where necessary

Signed: Tom G. Ante 38
(Chief Mechanic's Signature) York

(Forward this form to Office when all entries are completed.)

THERE WAS A TIME when we thought that we could not afford to operate a shop cost and maintenance control system. Now we know that we can't afford NOT to keep such records.

Until 1946, we "kept an eye open" on and made mental notes as to how much gas went into our truck gas tanks, how often the trucks needed repairs, the condition of the tires, body condition, and so on.

In time, we began to suspect that it wasn't enough just to "keep an eye open" on the fleet, or to keep mental notes, because when we wanted to prove a suspicion that a certain truck or trucks were becoming too costly to operate, we had nothing "in writing" to prove it.

Like most small fleetmen, we couldn't see the wisdom of "paying good money for paper work." Suppose a few of the trucks did burn a gallon of gasoline more per day than some of the others. So what? A half dozen such trucks would burn up only a little over a dollar's worth of gas daily, we reasoned. A bookkeeper, to keep track of this consumption, certainly would cost five times that amount—at the very least.

(TURN TO PAGE 178, PLEASE)

Form #120 (Mar 49) JOB REQUEST Voucher Number 38

Truck No. 38 Model No. D-2 Mileage 89906 Date Out of Shop 4 DEC 48

Date In Shop 4 DEC 48

Brief Description of Work (Use Reverse Side if Necessary)--Mech--Hrs--Rate--Cost

Adjusted Ignition & Timing 1.75 12 1.48

MATERIALS OR PARTS REQUIRED (Check One)

Part No.	Quantity	Description	Stock Bought	Repair Parts	Rebuild	Cost (If Known)
<u>26-1</u>	<u>1</u>	<u>Bush (at)</u>	<u>✓</u>			<u>.68</u>
						<u>.80</u>
						<u>1.48</u>

REMARKS OR RECOMMENDATIONS.

Job OK'd & all entries completed where necessary

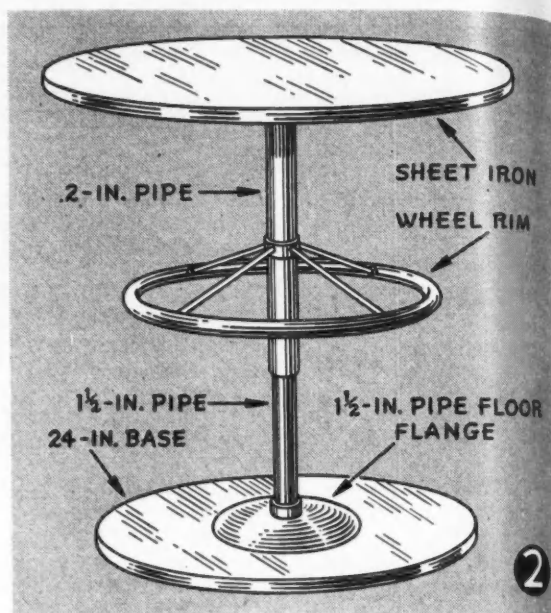
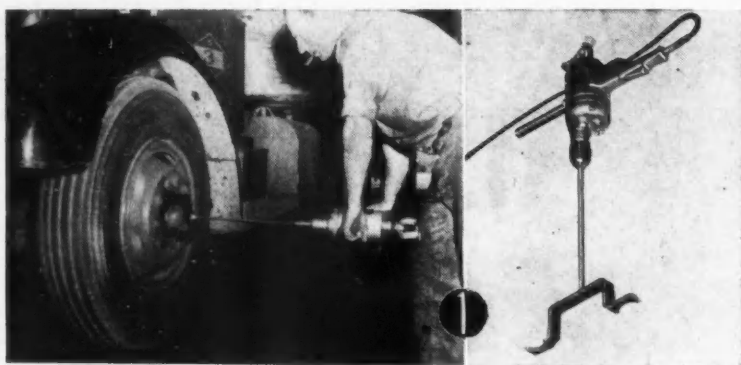
Signed: Tom G. Ante 38
(Chief Mechanic's Signature) York

NOTE: This form must be used each time Repairs or Replacements are made on Vehicles. Vehicle should not be worked on unless this sheet is started!

FIG. 1 (Upper Left) Driver's Daily Report, 4 1/4 x 5 1/2 in. When all are in, clerk arranges them numerically and posts data in truck record book, orders shop work as needed

FIG. 2 (Center) 1000-Mile PM Inspection form, 8 1/2 x 11 in. Clerk watches daily mileage and orders PM when due

FIG. 3 (Lower Left) Shop Work Order form 8 1/2 x 11-in. used by clerk for PM inspections or repairs. This form is returned after work is finished, labor and materials noted



Shop hints

from FLEET SHOPS

1. Wheel Spinner

By Herman A. Droke

Roy B. Moore Truck Lines, Kingsport, Tenn.

A 1/2-in. electric drill is used as the motive power in our shop to spin the front wheels for balancing. A special jig is inserted into the chuck to engage the wheel. The spinner part is made from a length of 1/2-in. steel rod with a flat iron welded to the end as shown. The head is knotted and shaped to fit two opposing wheel bolt nuts.

The drill spins the wheel at about 1740 rpm. An unbalanced wheel at this speed produces a noticeable shake on the steering wheel and imparts a vibration to the drill.

2. Welding Table

By Frank P. Coulomb
Inglewood, Cal.

A handy steel table for welders can be made in the shop so that a man sitting down can have ready access to the work. The center wheel rim is used as a foot rest and as a turning device to revolve the work table.

The base is made from a piece of boiler plate 24 in. square. A 1 1/2-in.

pipe flange is welded to the center, and a 32-in. pipe is fitted to the base. The top is made from the same type sheet metal, cut 30 in. square. This is welded to a 2-in. pipe which should be 18 in. long. A wheel rim is fitted to this pipe through spokes welded as shown. This should be about 20 in. in diameter.

Now the top section fits over the base since one pipe will fit over the other, and the table top can be turned.

3. Bushing Hone

By Clinton B. Baker
State Roads Commission, Easton, Md.

A bushing hone for large diameter bushings can be made up in the shop. This one is made from a piece of radiator hose of the same diameter as the inside diameter of the bushing to be honed. The hose is slit up one side to permit inserting emery cloth.

A wooden plug is fitted to the inside diameter of the hose. It is drilled to take a 1/4-in. rod. This is threaded for a double nut and washers and bolted to the plug. The plug is then tacked to the hose as shown and the heads are countersunk so they won't rub the bearing surface.

This tool is inserted into the work and turned with an electric drill.

4. Scribing Tool

By Erwin Nagel
International Harvester Co., Long Beach, Cal.

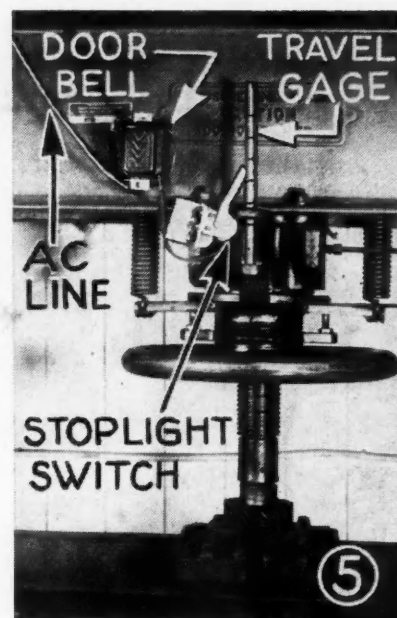
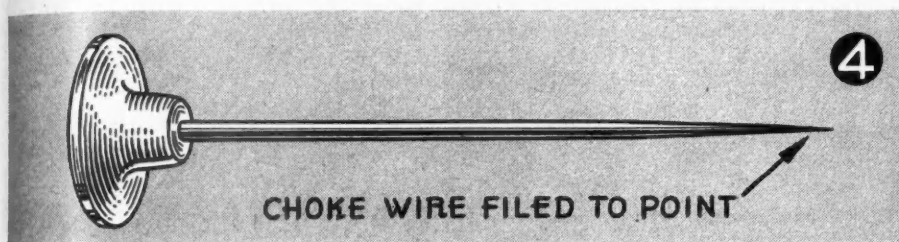
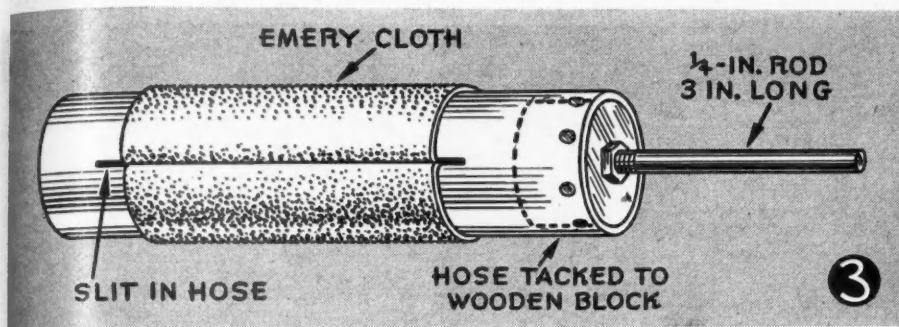
An old choke wire with handle makes a good tool to clean welding tips when filed to a point as shown. This can also be used effectively as a scribing tool. Just remove choke assembly and cut off a 4-in. length. Grind it to a point and you have it ready for the job.

5. Drill Press Guard

By Clinton B. Baker
State Roads Commission, Easton, Md.

Most shops today are equipped with a heavy hydraulic press. These have a sight gage to show the limit of ram travel, but it is difficult to keep the gage in mind while concentrating on the work.

I installed a warning device on the press and find it very practical. All you need is a stoplight switch, a small transformer, a bell or buzzer and some wire. The switch is mounted in such a position that the arm rides on the press traveling gage. This is wired to a buzzer and through a transformer. When the travel gage moves down far enough to permit the switch to close the circuit, the bell will ring or the buzzer go off to warn the operator.

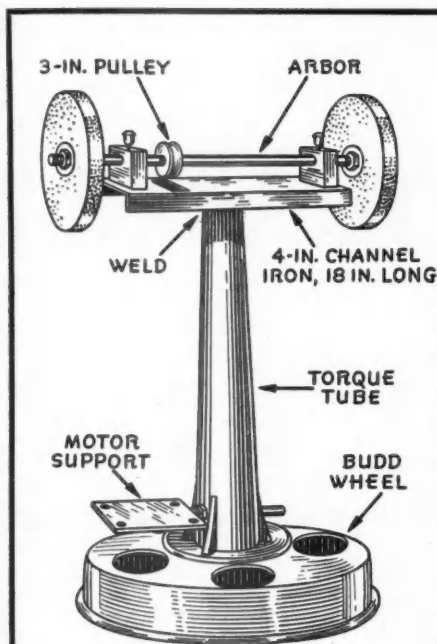


\$25 Hint of the Month ★

Home-Made Pedestal Grinder

by C. A. Page

Norris Creamery Co., Minneapolis, Minn.



We needed a large grinder for heavy-duty work, but couldn't talk the management into buying one, since there was not sufficient work to justify the purchase of a new one.

The grinder finally made up in our shop is made from a 1½-ton Ford wheel for a base, a 1928 GMC torque tube for the upright, and a piece of 4-in. channel iron 18 in. long for the arbor mounting. The base of the upright is drilled to take a threaded shaft to which is bolted a motor base of sheet steel. This unit is flexible so

that a spring is attached to one side for a self-tightening belt take-up.

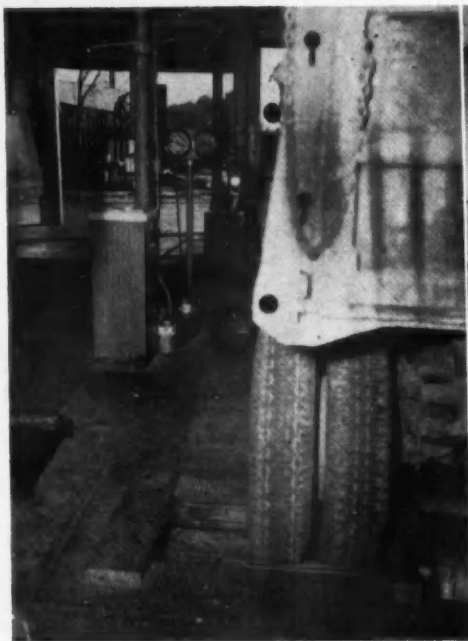
The arbor is a second-hand unit with grease cup oilers, although this too can be made up from two bearings and a ¾-in. shaft 26 in. long, threaded at both ends. A 3-in. V-type pulley is attached to the cross shaft, and the channel iron base is cut out to take a belt to the motor below. We use 12 x 1-in. grinder wheels mounted on a ¾-in. shaft. A 4½-in. pulley on the motor turns the grinder at 2500 rpm for good grinding job.

➤ ➤ ➤ LET'S SEE WHAT YOU'VE GOT ➤

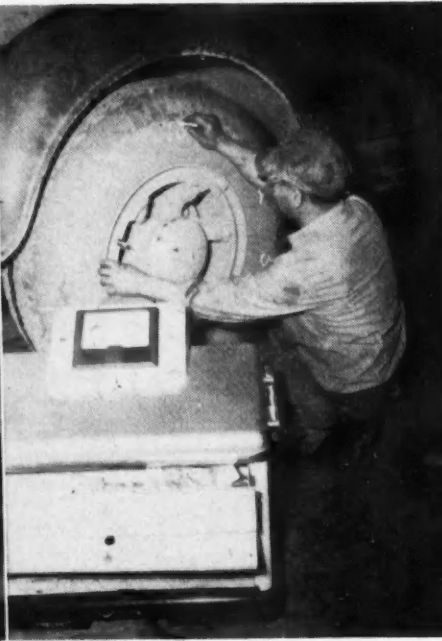
\$25 FOR THE BEST HINT PUBLISHED
EACH MONTH . . .

\$5 FOR ALL HINTS
PUBLISHED EACH MONTH

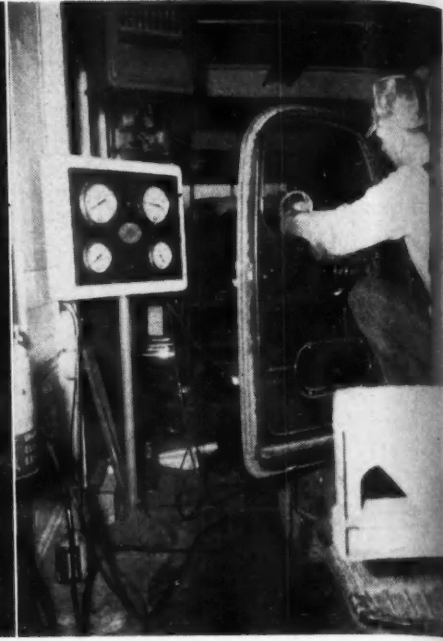
Whether it's a new shop tool, a short cut to service, an overhaul idea, or a better way to run a truck—we want to consider it for publication on these pages. Contributors to our shop hints will tell you that it's easy to make the grade. Just outline your idea—maybe draw up a simple diagram. We'll put our editors and artists to work on it—and pay you for your trouble. Will we hear from you soon?



MAJOR SHOP EQUIPMENT includes direct-reading brake tester, above . . .



Electronic wheel balancer, shown with numbers on tire for pick up . . .



Chassis dynamometer which is used for all final checks by PM Dept. and . . .

▼ **LIKE MANY** (I do not say all) highly-specialized fleets that think the job to be done is more important than the trucks that do it, our vehicle maintenance was bad. Sometimes our trucks were running at about half their potential power, and we had no systematic way of finding it out. I've seen the time when we even had trouble passing the Nebraska compulsory state inspection. We referred to the stickers as "coveted."

But about 18 months ago all that was changed. We really went to town. First we surveyed our needs carefully and made careful plans for an efficient maintenance routine. Next we bought the best equipment available, including both engine and chassis dynamometers, a front-end machine, a direct-reading brake tester, and wheel balancer. Then we arranged our engine rebuilding and other departments into a straight line production set-up, and finally worked out a preventive maintenance program that leaves no stone unturned.

Net result: All trucks are operating at maximum efficiency, proved at regular intervals on the dynamometer; drivers are happier; congestion due to haphazard methods in the shop is eliminated; gasoline mileage is definitely improved and best of all,

Revitalized

• • •

Modern shop equipment and



by Paul Nelson

Shop Superintendent, Lyman-Richey Sand & Gravel Corp., Omaha, Neb.

total maintenance costs are down about 25 per cent.

Our automotive job is to maintain a fleet of about 125 trucks of which 10 are tandem-drive Transit Mixers and six are Dumpcretes, both for the quick delivery of ready-mixed concrete. The Transit Mixers have an extra engine, used for turning the mixing drum and because of the en-

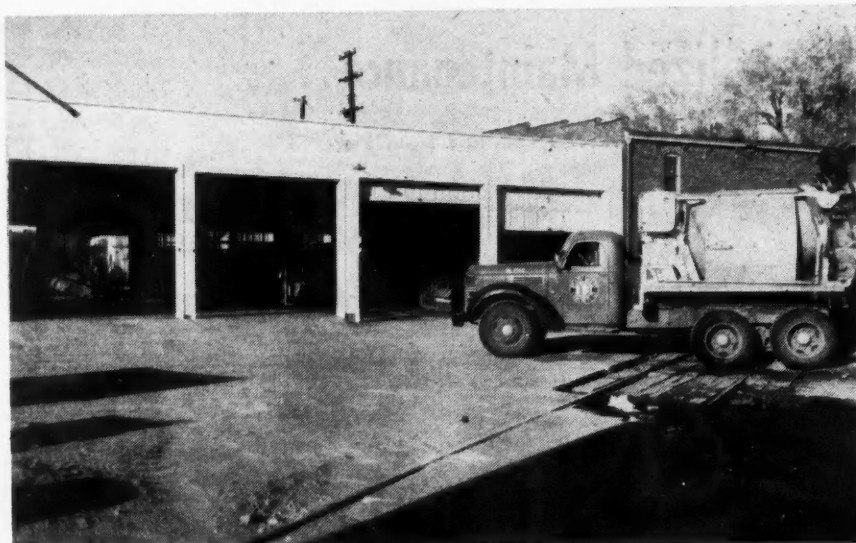
gine shortage when they were purchased we have three different kinds of auxiliary engines—LeRoi, Allis-Chalmers and Waukesha.

The mixers are mounted on K-10 and K-7 Internationals. Other members of our fleet, which is incidentally scattered all over the state, are Fords, Chevrolets, and a couple of Diamond T's equipped with Hercules engines.

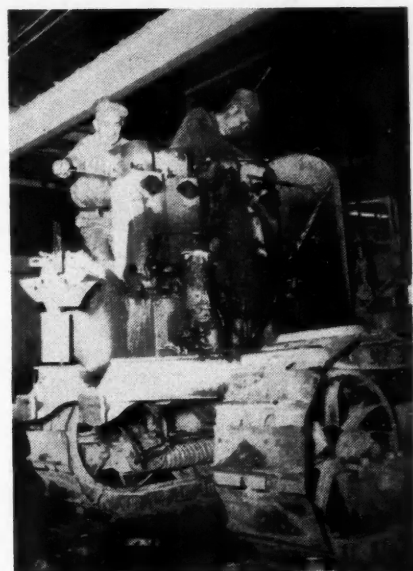
Besides our trucks, we service and rebuild the engines used on our equipment at the sand pits and other places. This consists of draglines, power shovels, power cranes, bulldozers, en-



Front-end check machine installed in narrow pit just big enough to hold it



TYPES OF VEHICLES vary widely in size and type, include Transmit-Mixers like one above which is shown outside shop entrance, a wide variety of straight trucks and even the "Cat" bulldozer being disassembled, right



Maintenance

• • • Puts Fleet on Its Feet

systematic routines cut costs, improve efficiency of 125-unit highly-specialized fleet

gine-driven air compressors. Among the makes of engines in this equipment are Waukesha, Allis-Chalmers, Caterpillar, Climax, Buda, Ammins and several steam engines.

Our truck maintenance routine starts when a vehicle is assigned to a driver. Each driver is required to make out a daily report. (See page 77.) This is turned in to me at the end of each day's work. It gives the speedometer reading at the start and at the end of the day's run, the gasoline and oil added. If the driver has a complaint, he reports it on a form.

A complaint concerning power would result in a dynamometer check before the truck was released the next day. Because with our new system, we beat the driver to the punch, we get almost no driver complaints.

Test Results Surprising

OUR schedule calls for a dynamometer check on each vehicle at 5000-mile intervals. This check consumes 30 to 40 minutes on our chassis dynamometer and the truck is checked in every respect under load and running conditions. Any condi-

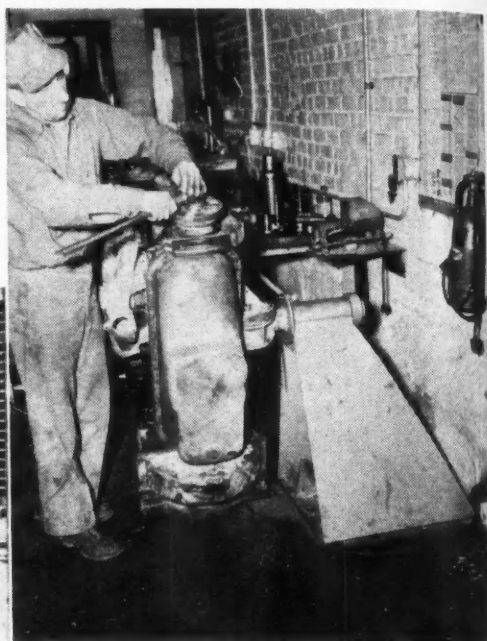
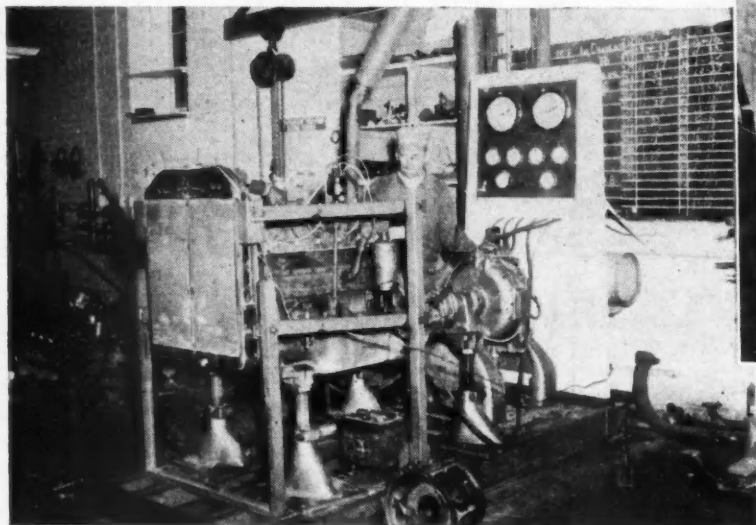
tion below par is repaired or corrected.

Sometimes results are surprising. We had a driver who complained about a high-speed miss at about 40 mph. When we put the unit on the dynamometer, we found the governor had been rendered inoperative and that the high-speed miss about which he complained showed up at about 60 mph, far above the speed at which our trucks are supposed to be operated. The dynamometer test has discouraged faking by drivers, tampering.

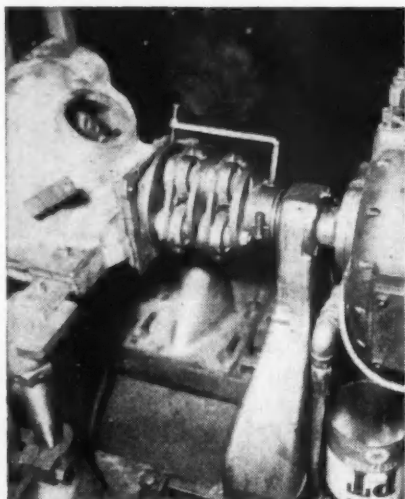
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Revitalized Maintenance...

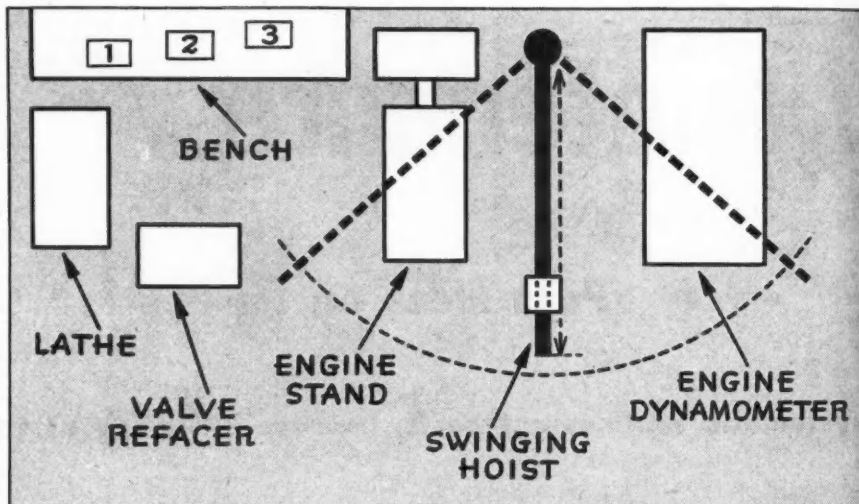
Continued from Page 75



ENGINE REBUILD DEPARTMENT (see plan drawing below) features a shop-built engine stand (above) which permits 360-deg. swivel and modern engine dynamometer shown at left



Special gage on dynamometer coupling assures quick and accurate alignment between engine and load unit



Layout of engine rebuild dept. shows how swinging hoist with sliding trolley permits quick shift of engines from stand to dynamometer. Bench is home base for valve spring tester (1), con-rod aligner (2) and con-rod straightener (3)

ing with governors and operating the trucks at excessive speeds because we usually can discover it.

When dynamometer records show torque readings are going down it is usually our first hint that a general overhaul is in order. When this occurs, we study the prior records of the truck and examine the age of the engine, the age of the rings, bearings, check number of rebore, ascertain whether the crankshaft has ever been reground and all such pertinent facts. If they add up on the wrong side of the ledger we install a new or rebuilt engine and put the old engine through our engine rebuilding department.

Equipment Has Tough Jobs

BECAUSE our equipment is exposed more than average to the abrasive dust of sand pits, cement and concrete plants, we exercise more than usual caution to keep it out of our engines. We use the oil bath type air cleaner for all of our engines and service them at 1000-mile intervals. We drain oil and charge filter cartridges at 5000 miles.

Our hauling job is considered a tough one. We can't tell our drivers to take it easy for the first 500 miles. Our trucks get a full load and its destination is usually a construction job, at least a short distance off the highway.

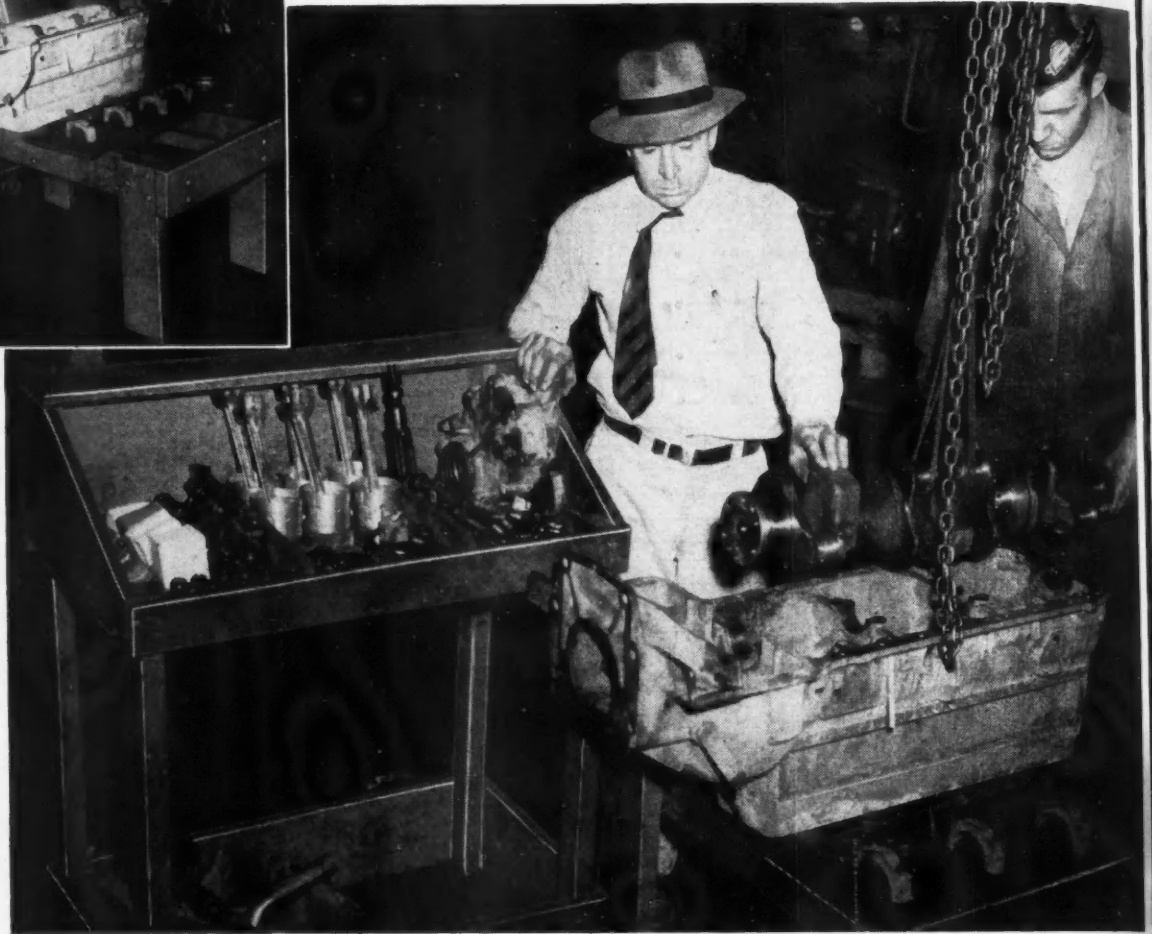
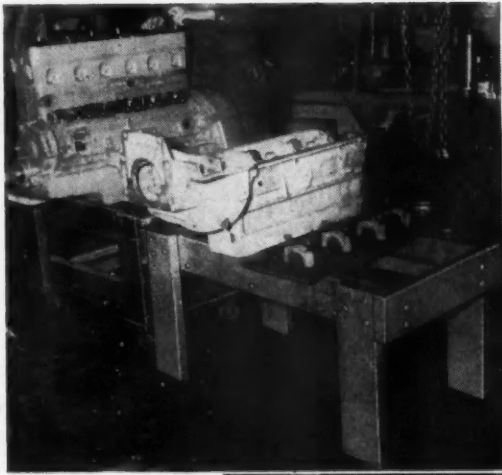


FIG. 1 (top) Engine stands are built of 2 x 6 in. lumber, 24 in. high, 26 in. wide and 48 in. long

FIG. 2 Portable parts bin, at convenient height, has space for all engine parts from crankshaft up

SUPER-OVERHAUL

Produces High-Mileage Engines

By doing a factory-perfect job—valves, rings, pistons, rods, bearings and shafts—

WE DON'T KNOW how far or how long our rebuilt engines will run because we have never worn one out. We send some engines to the junk pile because they have become obsolete,

or because they have become misfits in our fleet, but never because they have been worn out.

With our method of rebuilding we can rebuild almost any engine in the

sizes we use, whether it is new or salvaged, and on the average get 100,000 miles of service between overhauls.

We've had engines that gave good



FIG. 3 C-type crane attachment, made from old plow beams is a "natural" for installing c-o-e engines. Adjustment provides correct balance for any engine

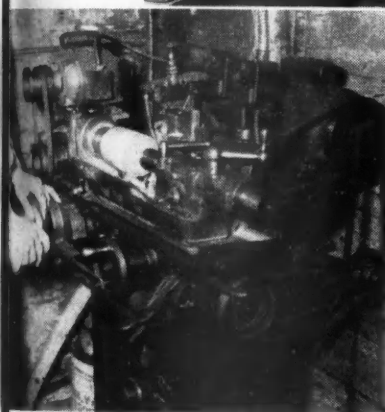


FIG. 4 Piston lathe assures accurate fit. It is one of many operations carefully watched in Watson shop

By L. E. Erlewine

Supt. of Maintenance, Watson Bros. Co., Omaha, Neb.

fleet averages over 100,000 miles between rebuilds

service for 300,000 miles before they came out of the chassis. Operating conditions and the job it does has more to do with the life of an engine than the miles it does. The short

haul engines with lots of starts and stops, with many alternate periods of heating and cooling, will need rebuilding at a lower mileage than the engine that runs almost constantly at

hauling capacity loads over the highway.

Our company owns more than 800 units and handles freight throughout the middlewest. Small shops are maintained in Denver, Des Moines, Chicago, Kansas City and Lincoln, but all engines are rebuilt at the main shop here in Omaha. Replacement engines are complete with manifolds and clutches intact which eliminates confusion in shipping short blocks to branch terminals when there are slight differences in manifolds or other parts. We attach a regular engine plate to each rebuilt engine on which is stamped, bearing, rod and piston sizes.

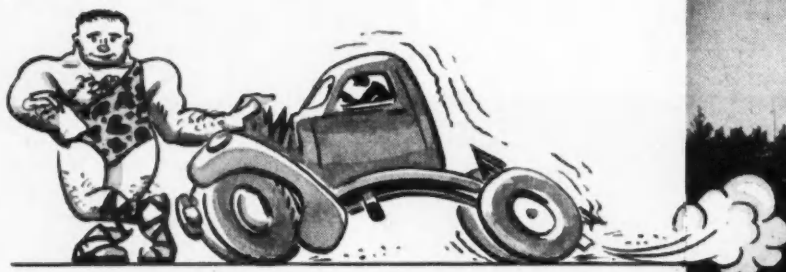
In our present setup our engines are normalized in the field but later will be normalized on an engine dynamometer. This will eliminate the troubles incidental to breaking in a rebuilt engine on the job even though our records show a low percentage of come-backs. We try to do everything possible to an engine when it is being rebuilt in our shop so that it can go out and do a full capacity job.

Simplified Stock

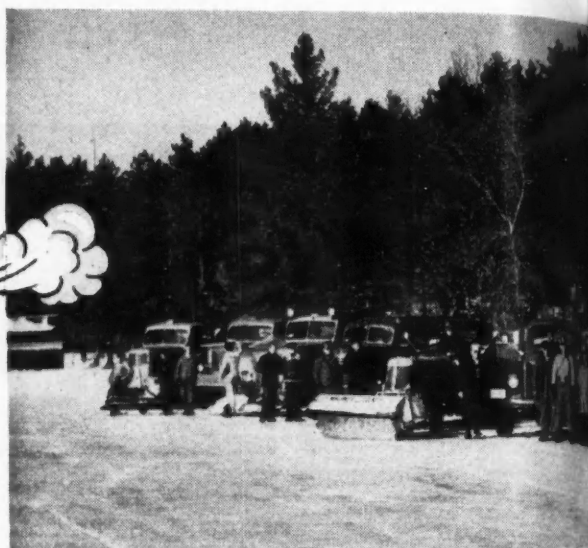
WE do not rebore our dry-sleeve engines. We install new sleeves with standard-size bores. This also has a beneficial effect on our parts inventory since we only need to stock standard-sized parts for these bores. We regrind our crankshafts when necessary down to .030 in., usually in .010 in. steps.

The three most common engines in the fleet are Green Diamond Internationals, Blue Diamond Internationals and Whites. We have simplified our parts bins by stocking parts in painted sections corresponding to the engine, blue, green and white. All parts are thoroughly cleaned after the engine is dismantled. We designed and built the cleaner according to our own ideas of what a cleaner ought to do. It consists of a large steel vat capable of holding several engines at a time. We use a circulating hot water (about 250 deg. F.) system and a cleaning solution mixed with hot water that removes all grease. This solution does not etch the metal. The vat is kept full of hot water. A

(TURN TO PAGE 172, PLEASE)



Front brakes aid truck stopping ability but multiple-axle combinations without front brakes are almost equal on straightaways and better on slippery curves



Front Brake Tests

Tend to Support Operator Claims

THE FIRST STEP in proving or disproving the long-standing controversy over the use of front wheel brakes on multiple-axle commercial vehicles, especially when operating on slippery road surfaces, is to be found in the first report by the Joint Committee of 1948 Winter Traction Tests, sponsored by the National Safety Council. The report shows the value of front wheel brakes under certain conditions, but amasses considerable evidence against the requirement that front wheel brakes be used on all commercial vehicles at all times.

The tests were divided into four phases — stopping distance tests on dry level concrete, stopping distance tests on glare lake ice on a straightaway course, steering control tests on glare lake ice on a 200-ft radius curve, and special tests.

Dry Concrete Straightaway

THE results of the tests conducted on the dry, level concrete straight-

THE IMPORTANT CONCLUSIONS

1. The loaded 3-axle straight truck and all of the combination vehicles tested on ice could stop on the glare ice curve in a shorter distance when the front wheel brakes were off. There were definite indications that the test vehicles could not be controlled on the curve with the front wheel brakes in operation as well as they could with the front wheel brakes disconnected.

2. The 4-axle truck full trailer combination equipped with air-mechanical brakes could stop on dry, level concrete pavement straightaway in almost as short a distance when the

front wheel brakes were off as when they were on.

3. All of the test vehicles could stop, without losing steering control, on the dry level pavement straightaway and the glare ice straightaway in a shorter distance when the front wheel brakes were on.

4. The 2-axle straight trucks could stop, without losing steering control, on either the dry level pavement straightaway, glare ice straightaway, or glare ice curve in an appreciably shorter distance when the front wheel brakes were on.

away are shown for each vehicle in Fig. 1. The stopping distance ratios (the per cent differential between the stopping distances with brakes off and on) indicate some very important facts.

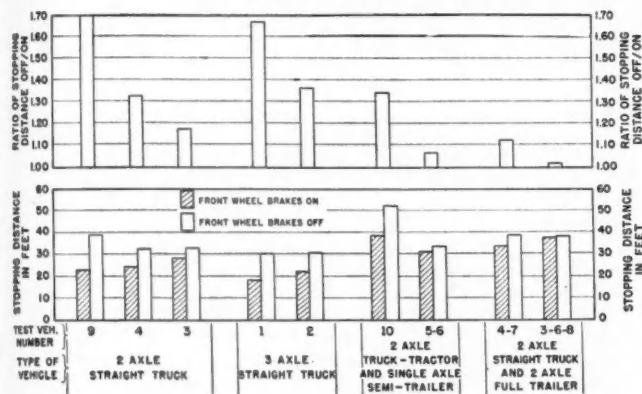
In the case of single-unit trucks, it seems conclusive that the use of front

wheel brakes results in an appreciably better stopping distance as far as dry, level concrete is concerned.

The ratios of the combination units — test vehicles No. 5-6, 4-7, and 3-6-8 — appear to substantiate the contention of some fleet operators that front wheel brakes are not a material factor



Fig. 1. Results on Dry Concrete Straightaway



The lower portion of this graph shows the average stopping distances with front brakes off and on for each test vehicle on a dry, level concrete straightaway. Vehicle No. 9, for example, averaged 23.0 ft with its front wheel brakes on, and 39.0 ft when its front wheel brakes were inoperative. The difference between these average stopping distances—the most important factor of the test—is shown in the upper portion of the graph as the ratio of the stopping distances (off to on)—the per cent differential. Thus, the upper portion of the graph shows that vehicle No. 9 travelled 1.70 times farther before stopping when its front wheel brakes were not in use than when they were in service. However, the ratios of stopping distances of the multiple-axle units—particularly vehicles No. 5-6, 4-7, and 3-6-8—are not great enough to permit a positive conclusion. The differentials (off to on) of these vehicles in terms of feet amounts to .7 ft (vehicle No. 3-6-8) to 4.7 ft (vehicle No. 4-7). It seems that some of these vehicles could operate without front wheel brakes with little loss of stopping ability on the straightaways but with definite improvement on slippery curves. (See Fig. 5.)

for combination units having more than three axles.

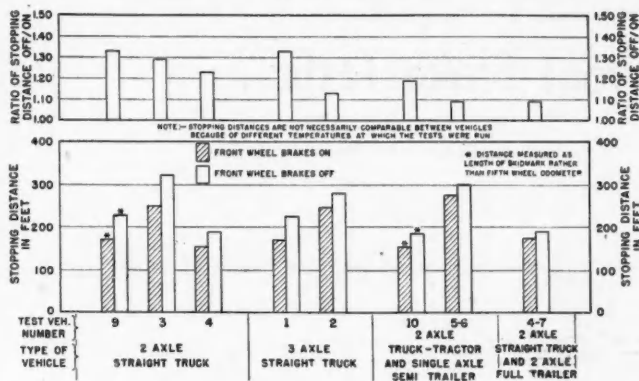
Ice Straightaway

TESTS similar to those conducted on dry, level concrete pavement were made on a straightaway located on glare lake ice. The stops first were

made by test drivers, then by line drivers.

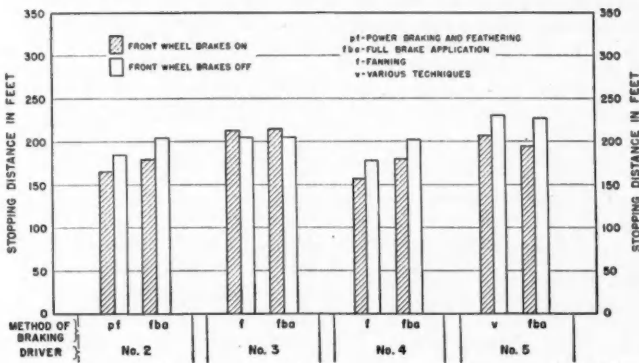
The vehicles were not stopped in marked lanes, but they generally stopped in a straight line, whether operating with or without front wheel brakes. If a vehicle did get out of control, which happened occasion-

FIG. 2. Test Driver Results on Glare Ice Straightaway



The results of this test generally follow the same pattern as the tests on the dry, level concrete straightaway. From a speed of 20 mph the drivers locked all brake wheels as quickly as possible. All vehicles were able to make a shorter stop with front wheel brakes off than when on. All stopping distances, except for vehicles No. 9 and 10, were measured by a trailing wheel speedometer-odometer device actuated by a brake pedal switch. These tests were made by the test drivers. Another group of tests on this course was made by professional line drivers. Their results are shown in Fig. 3.

FIG. 3. Professional Drivers on Glare Ice Straightaway



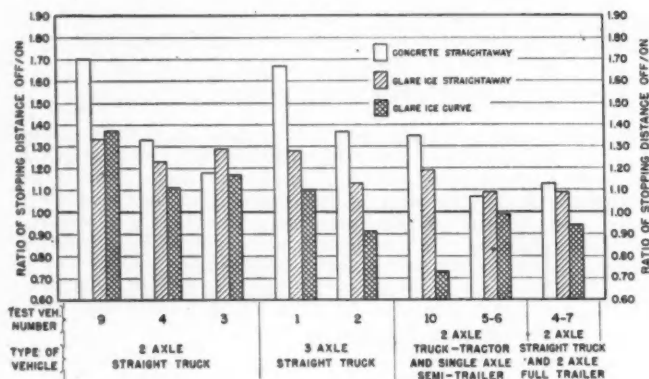
The effect of full braking and other braking techniques on the stopping of a vehicle with and without front wheel brakes on a glare ice straightaway is shown above. The tests were made by four line drivers with vehicle No. 5-6. On one test, full braking was required of all drivers. On the other test, the drivers used their own techniques. How the stopping distance for the first method compared with the driver's preference is shown for each driver. Drivers 2 and 4 did a little better using their preferred methods, while drivers 3 and 5 turned in about the same results with either method. The ratio of Driver 2 was 1.12 when he used his preferred technique (power braking and feathering) and 1.13 when he used full brake application. Except for Driver No. 3, all drivers stopped their vehicles in a shorter distance with the front brakes in operation.

ally, it appeared to be easier to steer out of the trouble when the front wheel brakes were not operating. Also there was a greater tendency for the vehicles to skid sideways with the front wheel brakes disconnected, but it was generally possible to steer the

Front Brake Tests ...

Continued from Page 81

FIG. 4. Comparison of Stopping Ratios of Three Tests



The stopping distance ratios that the various test drivers established on the dry, level concrete straightaway, the glare ice straightaway, and on the glare ice curve course are shown above for each vehicle tested. It will be noticed that, except for vehicle No. 9, the ratios for all vehicles are less for the glare ice curve than for the glare ice straightaway. There is little doubt that steering control was lost on the curve when the front wheel brakes were connected and wheels locked.

vehicle out of the skid by releasing and reapplying the brakes.

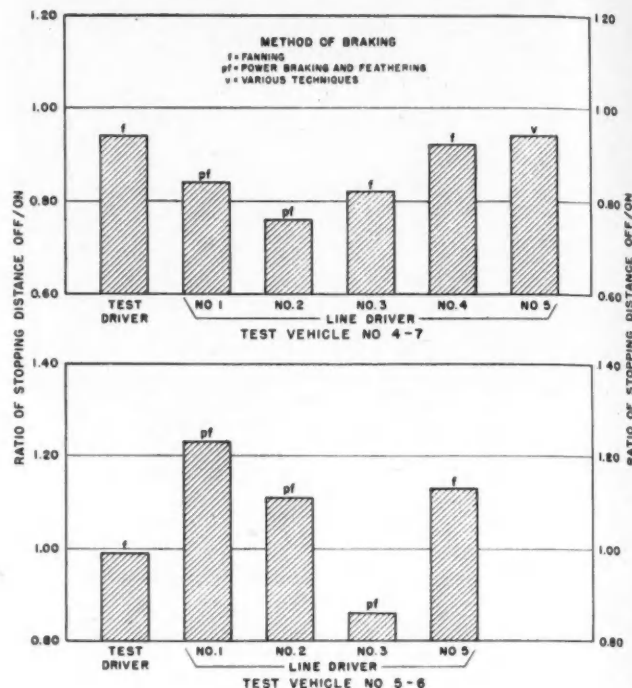
Additional tests were run later on all vehicles, except No. 5-6, to determine the effect of speed on the relation between stopping ability with and without front wheel brakes. It was found that the stopping distance ratios for the two speeds tested—20-mph and 10-mph—are in fairly close agreement for each vehicle. For example, in the case of vehicle No. 4-7, the stopping distance ratio is 1.20 at 20 mph and 1.24 at 10 mph.

Another interesting fact is that the ratios computed from tests at 20 mph on different days, and at different temperatures, are in close agreement. For example, for vehicle No. 1 the ratio is 1.36 at 22 deg F, and 1.39 at 11 deg.

The results of this series of tests by test drivers are shown in Fig. 2. In general, they follow the same pattern as the tests on the dry, level concrete straightaway.

The line drivers made their tests on vehicles No. 5-6 and 4-7 under somewhat different conditions than

FIG. 5. Ratios of Combinations on Glare Ice Curve



These graphs show a comparison of stopping distance ratios computed from results obtained by a test driver and several professional line drivers within a 12-ft lane on a 200-ft radius curve on glare lake ice. Each driver made a series of stops using his preferred braking technique. He then repeated the tests using the fanning technique, if this method was not the preferred method. In the case of vehicle No. 5-6 (a 2-axle truck-tractor and single axle semi-trailer), the line drivers, except one, could stop the vehicle in a slightly shorter distance with the front wheel brakes engaged. Since the test driver stopped the vehicle in a distance that resulted in a stopping distance ratio of 0.99, it is evident that it made little difference in the case of vehicle No. 5-6 whether the front wheel brakes were on or off. On the other hand all drivers of vehicle No. 4-7 made shorter stops without the front wheel brakes.

TABLE 1. Effect of Fifth Wheel Location and Chains

Temperature (deg. F.)	Fifth Wheel Location (inches)	Chains and Location	Critical Curve Speed (mph)	Entering Speed (mph)	Braked Wheels Sliding	Average stopping distance, in feet with front wheel brakes		Ratio of Stopping Distance (off to on)
						ON	OFF	
30	0	None	17	17	None ²	123	128	1.04
31	15½	None	18	17	None ³	116	117	1.01
32	0	All Wheels	18.5	17	All	39	39	1.00
32	15½	All Wheels	17.5	17	All	44	53	1.20
33	0	Rear of tractor and semi	20.0	17	All	42	53	1.26
32	15½	Rear of tractor and semi	17.5	17	None ⁴	55	52	0.95

¹ Inches ahead of center line of rear tractor axle.

² Condition of impending skidding approached with brake chamber pressure of 10½ lb/sq. in.

³ Condition of impending skidding approached with brake chamber pressure of approximately 12 lb/sq. in.

⁴ Condition of impending skidding approached with brake chamber pressure of approximately 28 lb/sq. in.

These are results of special tests, particularly on the effect of varying the location of the fifth wheel on stopping distances, and the effect of chains on stopping distances; in both cases with front wheel brakes on and off. As explained in the text, better results were obtained when the fifth wheel was moved 15½ in. ahead of the centerline of the rear truck-tractor axle. As for the chain tests, it was found that much shorter stops could be made with "premium" chains than without chains

the test drivers. First, the stops were made within a 12-ft lane marked on the glare ice straightaway. Then, each driver employed two stopping

techniques—a full brake application and any other preferred method.

The results of these tests are shown (TURN TO PAGE 139, PLEASE)

A Systematized Fleet Safety Program

BY THE BUREAU OF HIGHWAY SAFETY NATIONAL COUNCIL

OF PRIVATE MOTOR TRUCK OWNERS, INC., WASHINGTON, D. C.

The

Why

and

How

of Visual Information...

Contests .. Awards

The

Why

SAFETY TEXT No. 6

The

How

SAFETY INSTRUCTION No. 6

IN previous articles in this series we have dealt with many essential phases of a desirable highway safety program, such as management and driver responsibilities, the selection, training and supervision of drivers, etc. However, despite the fact that a driver may be thoroughly trained and strictly supervised, management must continually guard against any careless tendency of the driver to relax his efforts on behalf of safety.

Whether the reduction in accident frequency which you may achieve can be maintained or be further improved will depend greatly upon the degree of "safety consciousness" which persists among your driver personnel. Some practical means for stimulating and retaining interest in the safety effort must be instituted by which management can create an incentive for a good safety record and indirectly exercise better control over its drivers on the road.

Contests and Awards

Safety contests and awards are an integral part of any well-rounded safety program and provide a powerful stimulus in the attainment of the common goal—safer and more efficient operation. Rewards in recognition of work well done not only improve employer-employee relationships but serve to acquaint the general public with the fact that *YOU* are cooperating in the safety effort.

Visual Safety Instruction

Visual information is most impressive. We more often remember what we see, than what we hear. This is particularly true with respect to highway safety. Consequently, your safety policy, safety instructions or reminders and other information designed for employee attention can be presented most advantageously in visual form.

Utmost care should be given to the method of presentation and distribution of such visual information as it is usually the medium of first contact with the employee. It should create a favorable and lasting impression and stimulate a sincere desire to comply.

IN relatively large companies, contests among several groups or divisions may be arranged to develop a spirit of friendly competition and rivalry and stimulate a desire among the drivers to vie with one another for top safety honors. Group contests are preferred by many large organizations because they introduce the advantage of collective effort or team play by which the disinterested individual may be spurred on to keep pace with his fellow-workers.

"Days elapsed since last chargeable accident" forms one basis of comparison for a given contest period. The "rate of accident frequency" is another.

Progress of a contest should be prominently charted on bulletin boards and the contest may well warrant additional publicity through posters, your own house organs, the local press, etc. For added interest, variations in the theme of contests may be symbolized by automobile, airplane, boat or horse races, favorite sporting activities, or other seasonable and timely subjects. Thermometer or clock-type charts for each group or division representing the number of days elapsed since the last accident are also effective methods of presentation.

In small fleet operations, contests either on an individual or an inter-company basis are usually preferred. In the latter event, advantage may be taken of opportunity to enter the various contests normally sponsored by national and local safety organizations, particularly among companies of similar industry, size or accident exposure.

If the contest is one between individual drivers, their progress should also be charted and similarly presented as heretofore described for groups.

Whether the contest involves groups or individuals, the details of the plan adopted must be carefully prepared, fairly conceived and thoroughly understood by all participants. Most important, all contests should have a definite starting and concluding date and they *must be conducted impartially*. Also, no contest should be undertaken unless accurate and complete records can be maintained.

(TURN TO NEXT PAGE, PLEASE)

No. 6 Visual Information CONTESTS AWARDS

The definition of an "accident" should be embodied in the contest rules and should be thoroughly understood by all contestants. Any incident involving his vehicle or its operation which can be properly defined as an accident must be reported by the driver, regardless of the degree or responsibility. In this connection, the generally accepted definition of an "accident" is "any accident resulting in injury to a person or damage to property or equipment, involving the use of or the operation of any company-controlled vehicle, whether the vehicle be stopped, in motion, parked, or on or off company premises."

Decisions regarding the responsibility or chargeability of accidents should be made by a rotating accident review board or safety committee consisting of drivers along with a representative of management as its chairman. Management should back up the recommendations and findings of its safety committee.

To avoid the possibility of lengthy discussion, some types of accidents may be designated in the contest rules so as to arbitrarily fix the responsibility (either partial or full) on the driver involved. Such types may include the following:

- Backing.
- Collision with a train or street car.
- Entering the line of traffic.
- Failure to report an accident.

Awards

Some bonus plan or system of awards should be instituted by management in recognition of good safety records and to serve as an incentive to drivers to attain and maintain such a rating. Whether such rewards be in the form of cash bonuses, War Bonds, medals, emblems, pins, buttons, billfolds, certificates or testimonials, their purpose is to serve as a reminder to the driver personnel of management's appreciation of their accomplishments in highway safety.

Many operators are of the opinion that emblems, medals, pins and the like are more effective than monetary awards and more properly reflect the spirit of the safety objective because they are a constant reminder to the driver and his colleagues of a job well done and eventually receive wider and more lasting recognition.

However, whatever the type of award may be, it should be accompanied by a certificate or merit card signed by an official of the company, citing in some detail the meritorious achievement for which the award was bestowed.

The value of the award should also be increased for each successive period.

The importance and value of safe driver awards are increased or decreased by the manner in which they are presented. Thus it is more effective to make such presentations at an annual company meeting or some other formal gathering of employees. Making a somewhat ceremonious occasion of the presentation adds dignity and honor to the awards.

Visual Information on Safety

As previously mentioned, your safety policy, safety instructions and other pertinent information designed particularly for employee attention may be conveyed to your employees most effectively in visual form—through the use of posters, dash cards, payroll inserts, bulletins, letters to home, etc.

In general, such printed or written material should be:

- Brief, but definite and to the point;
- Clearly stated in easily understood language;
- Attractive and eye-appealing (preferably in colors);
- Created and presented to stimulate interest and compliance.

POSTERS OR SIGNS—Recommended sizes, 8½ x 11 in. or 17 x 22 in., preferably in color, on such subjects as accident hazards, safety slogans, right and wrong way of operating vehicles, seasonal and congratulatory messages, graphic charts, etc. Mounted at eye level at locations where they can be seen easily and frequently. Large lettering, frequent changes are advantageous.

"DASH" CARDS—Small cards, 3 x 6 in., usually designed to fit into a holder attached to the dashboard of the vehicle. Such cards, printed with a safety message on each side for reversal and use in succeeding periods, can be made to carry pertinent safety instructions as an effective aid to safe driving.

PAYROLL INSERTS—The pay envelope is a good place to insert safety reminders—a short message of broad application dealing with safe thinking and safe acting—a word of thanks for work well done. Some examples: "Thanks. You did it again—no accidents", or "Nice going—not even a scratched fender", or "Your care and skill cuts our bill. Many thanks."

CAUTION OR INSTRUCTION BULLETINS—Printed bulletins, carrying the endorsement of management and aimed at either drivers or supervisors, are especially useful in presenting in detail a number of selected safety subjects. Provision should be made for the filing and safe-keeping of such bulletins so that they may be available for future reference.

SAFETY BOOKLETS OR MANUALS—A pocket-size booklet with durable binding containing safe driving procedures, rules of the road, company policies, what to do in case of an accident, etc., will prove exceedingly helpful to your drivers. Added importance to the value of the manual is given when the driver is required to sign and register a receipt therefor.

LETTERS TO THE HOME—The value of this type of employee contact should not be underestimated. Such letters should convey recognition by management of good safety performance or be constructive in making the necessary and helpful suggestions concerning an employee with a bad accident record. They should be personalized and worded to appeal to the family as well as the employee.

PHOTOGRAPHS AND FILMS—For bulletin board display, photographs taken at the scene of an accident and posed "stills" of safe or unsafe equipment, practices and procedures constitute important aids to visual education in safety. Motion picture or sound-slide films on safe driving practices are most impressive and may be shown to large groups at company meetings or other special occasions.

Most of the material mentioned above may be easily procured.

Safety posters, payroll inserts, instruction dash cards, and the like may be obtained from the National Safety Council in Chicago and other safety organizations. Insurance companies, state and federal agencies, local safety councils, trade associations, etc., also have safety posters and films readily available for distribution (either free or at nominal cost) to interested parties. Bulletins, letters, etc., must of necessity originate with the individual operator or company conducting the safety program.

SAFETY INSTRUCTIONS

In This Highway Safety Program for Commercial Vehicles Operators

THIS ISSUE:

Visual Information . . . Contests . . . Awards

PRECEDING ISSUES:

Management Responsibility
Driver Responsibility
Driver Selection, Training and Supervision
Accident Reports and Records
Human Engineering

SUCCEEDING ISSUES:

Group Safety Meetings . . . Development of Safety Committees
First-Aid Training
Conservation of Equipment
Unusual Highway Hazards; Winter Driving; Holiday Hazards; Night Driving; Highway-Railroad Grade Crossings
Fire Prevention
Safety Through Courtesy . . . Defensive Driving

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DOCTORS, lawyers, engineers, and other professional people periodically hold conventions to keep posted on what is new and important to them and to freshen up their viewpoint toward their work. But who ever heard of a convention of truck drivers to do the same thing? They do meet over coffee and talk shop, of course, but it is not quite the same thing as a formal gathering where they can discuss and be brought up to date on new rules and regulations and where they can polish the rust off a lot of half-forgotten knowledge that just hasn't been used very much.

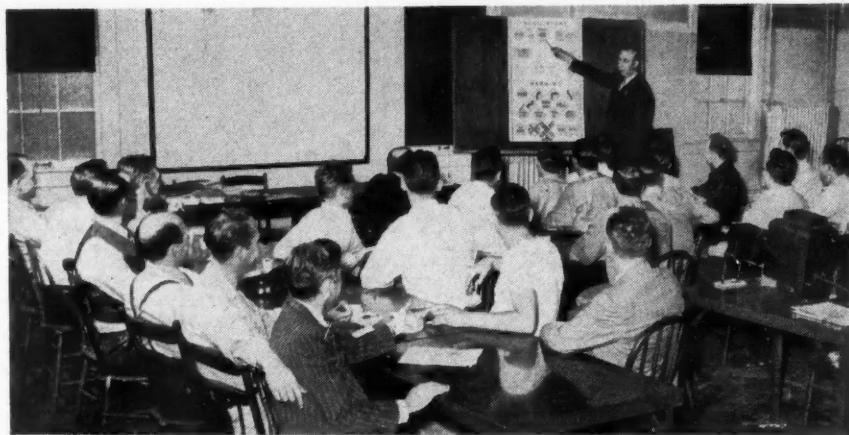
More than three years ago, the Michigan Trucking Assn. decided to do something about that situation, and started what it calls the "Driver's Refresher Course." Originally, the plan was to outline a program for member companies so that each could give its own course. However, it was found more practical for the association to handle the job, which it has proceeded to do very successfully. Courses are under the direction of John Cross, a member of the Detroit Police Department Bureau of Public Safety, who laid out the curriculum with the collaboration and assistance of several safety and personnel men from member companies. The setup is unique in that while on the police department payroll, he is assigned to the transportation industry full time, with the objective of building up better cooperation between the drivers and the police department in matters of safety, movement of traffic, and other related matters of public interest. He has full charge of the driver training course and arranges for instructors.

Can Be Adopted By Fleets

ALTHOUGH the refresher course has been conducted by the association, it can be adopted by individual operators to their own needs



Driving tests are held on ATA Rodeo course, resemble latter in detail



Except for driving tests (see photo below) most of the course is conducted in classroom on an eight-hour-a-day schedule, covering variety of subjects

Refresher Course for Experienced Drivers

Three-day school, conducted by Michigan Trucking Association, includes instruction in proper driver attitude, freight handling, accident prevention, equipment conservation and good driving techniques

By Leonard Westrate

CCJ Detroit News Editor

if they do not belong to a state association or if their organization does not offer it. All it takes is a small amount of equipment, a classroom, and some intelligent planning by the management. MTA figures it has invested about \$500 in equipment for the course, although it would be possible for smaller organizations to get by for less by borrowing some of the required equipment. The association has offered to assist organizations and individual operators who want to set up similar courses. Requests should be directed to Miss Florence Kiely, general manager of MTA, Fort Shelby Hotel, Detroit.

MTA invites as instructors men who are actively engaged in the business covered by each particular section of the course. For example, the session on conservation of equipment is handled by a trucking company maintenance engineer or perhaps a qualified automotive engineer. Generally, instructors are glad to return month after month, and they build up a continuity of course material as they go along. Sometimes, however, pressure of business requires a substitution. Each instructor is chosen for his ability in a certain field, and for that reason is given the responsibility.

(TURN TO PAGE 132, PLEASE)



If you foam at the mouth because vehicles look dull or streaked despite frequent washings, here are recommendations that should help you brighten up your fleet

By Harvey H. Earl

Superintendent of Motor Equipment, United Parcel Service, Inc.,
New York, N. Y.

EDITOR'S NOTE: This article has been excerpted from a paper, presented at the SAE Annual Meeting in Detroit. Mr. Earl covered the subject so thoroughly that his paper will be presented in two parts in this and the April issue.

Are You in

THE CONTAMINANTS which deposit on vehicle surfaces are of several types and vary with the type of area operated in. These can be divided into two classes: Dry and sticky.

The dry material is dust; fly ash from chimneys and other air-borne particles which land on the vehicle surfaces. Static electrical attraction probably plays a part in these deposits. In areas of light traffic and little industrial activity these represent the major problem and in periods of dry weather can be dusted off. (An interesting experiment would be to try a reverse static charge to repel them from the surfaces at the end of each day.) Many operators find that no chemical cleaner is needed to remove this material, even when complicated by rain and mud. An ordinary wash with plain cold water is sufficient.

The "sticky" materials are generally soot, finely powdered rubber, oil, grease, insoluble metallic soaps from detergent oils, rusty runs or drippings from elevated structures, dried up bugs, wax finger marks from bread wrappings and the so-called traffic film resulting from condensed exhaust fumes. To these have been added in recent years the salt deposits from the sodium chloride used on streets in cities and urban areas for snow and ice removal.

In view of the above, we also know that the chemical composition of the synthetic finish is gradually weathering. The drying oil in the enamel is subject to continuous and progressive oxidation. Sunlight accelerates this because of its infra-red rays. Polymerization of the resin is also a factor in their ageing.

How Dirt is Removed

IN CHOOSING the proper cleaning material the following should be kept in mind. In general, the action of

a Lather Over CLEANERS?

car washing materials is to reduce the surface tension of water (the usual medium) so as to allow it to separate the dirt particles from the car surface. This effect is not sufficient to completely dislodge the dirt from the car surface and mechanical agitation is necessary in order to accomplish this. Although some dirt can be removed merely by applying the solution and hosing it down, during which time there is a minimum of mechanical action, it has been found that the desired degree of cleansing is not accomplished unless mechanical action is imparted by means of manual or of rotating brushes or a sponge or mitt wielded by hand.

Residual Scum

DRY surface contaminants, and even many of the sticky ones, are apparently removed readily by a good wash. However, we have no assurance that nothing is left behind. The sudden influx of rinsing water into that suspension of dirt and cleaning solution on a soaped truck, agitated by brushing, causes, with many cleaners, a breakdown of that suspension; resulting in redeposition of minute quantities of dirt, grease, lime soaps, etc. This is imperceptible, and only noticeable after many washings when an accumulation can be observed. Many fleet operators are unaware of this and tend to confuse it with "traffic film" or "road film" which is entirely different.

Many cleaners cut road scum but still redeposit small quantities of it as residual scum. A cleaner leaving a residual scum does not remove it in subsequent washings. Therefore, after six months or so they wash on top of their own redeposited dirt.

To test for scum take a freshly washed vehicle, permit to dry, wet your finger with saliva (an excellent, if not commercial cleaner) and rub.



WHAT TO EXPECT FROM A CLEANER

"Proper aqueous solutions of vehicle washing materials should:

- "1. Soak into the dirt and soften it.
- "2. Dispense solid particles and emulsify oily particles when they are agitated.
- "3. Hold such suspensions throughout the rinse, and fail to redeposit no matter how great the dilution with cold water.
- "4. Not harm the finish noticeably, even if applied hundreds of times in succession at highest concentrations."

Occasionally an excellent cleaner is condemned as a "streaker" because it has partially removed the residual scum. Often even the best cleaner does no better than put a dent in such hard scum and begins by streaking, not the paint, but the scum.

This can be tested by rubbing the area around the streaks. The whole surface can then be cleaned down to the same condition as the streaks. A cleaner that removes old residual scum can be both a blessing and a curse—a blessing if it removes and keeps off the scum without damaging the paint, and curse if it is so "efficient" as to destroy the lustre and gradually the entire finish.

To find out its category apply the cleaner full strength to a test panel and allow to dry. When you wash it off you may find you have a very fine paint remover.

The supplier of the cleaning material should be asked if it is suitable for a waxed finish. If the answer is affirmative, the cleaner will certainly not remove scum or greasy finger marks, and will be of little use unless a waxed finish is used.

Pros and Cons on Cleaners

IF WE assume that many materials sold for the washing of commercial vehicles can be successfully used, it is equally true that there are rather low limits; both in regard to performance and to safety. Five or six different truck washing materials are commonly used, either alone or more frequently compounded. Every product is a compromise, more or less happy, between efficiency and safety.

SOAPS (preferably soft or liquid potash soaps of fatty acids because they are more soluble and rinse quicker than

(TURN TO PAGE 121, PLEASE)



MURDER! in the Fleet Field

... the Victim



PISTONS

Compare these "mutilated bodies" with your own damaged pistons and pin down the dangerous, profit-eating culprits

This third in a series of clinical studies of parts failures features common piston breakdowns. Views of 13 conditions were selected to show fleetmen what can happen with improper operation, careless fitting and assembly, foreign particles, dirty lubrication, etc.

These pictures have been selected from the files of several manufacturers to help curb unnecessary and costly premature vehicle breakdowns. Photographs were supplied by Perfect Circle Co., Koppers Co., and McQuay-Norris. Views are authentic and prepared especially for this type of instruction—although it must be recognized that some types of damage do not always show up in a uniform fashion.

CAUSE . . .

Insufficient Piston Clearance



EFFECT:

Thrust side of piston shows scoring, with damage extending from the very top to the bottom of the skirt. Corresponding cylinder wall shows ridges and scoring over entire length of piston travel.

REMEDY:

Careless fitting methods account for this. Insist on use of accurate gages to measure both piston diameter and cylinder cross-section. Refer to manufacturers' recommendations for operating tolerances.

CAUSE . . .

Bent Connecting Rod



EFFECT:

Excessive wear of one side of piston skirt is noted. Ring faces will not be held parallel to the surface of cylinder wall, and upper and lower sections of the rings may show excessive wear with a rounded appearance.

REMEDY:

Connecting rods should always be checked for alignment on a special jig and corrected if necessary. The entire piston assembly should be checked for alignment between the piston skirt and crankpin bearing hole of the conrod. It should be checked for twist and for offset of the connecting rod bore.

CAUSE . . .

Too Shallow Groove Depth



EFFECT:

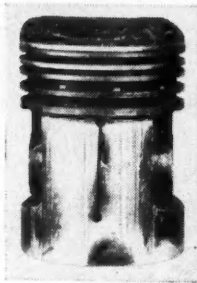
Rings "bottomed" in the groove, while thrust load was on the ring faces. Rings scored and broke. Piston shows scoring over entire surface. Rings have pits and burrs.

REMEDY:

Use groove depth gage for accurate measurements. While a rule and straight edge will suffice (in accurate hands) tendency to err is increased. Recheck ring fit before installing pistons.

CAUSE . . .

Skirt Collapse—Rough Handling



EFFECT:

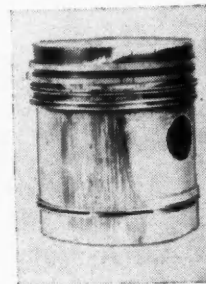
Skirt is dented and shows high bearing area around dent.

REMEDY:

Failures of this type are frequently caused from rough handling during installation. Pistons with rings installed should be put in cylinders with a good piston ring compressor. A steady push is safer than tapping the head of the piston with a hammer handle. Lubricate piston and rings before installing.

CAUSE . . .

Improperly Ground Piston



EFFECT:

High point of cam is not in center of the thrust face. Scoring is noted on piston skirt.

REMEDY:

Consult manufacturers' recommendations in cam grinding pistons. Expansion due to temperature is different on every type of piston. As a result different clearances and skirt contours are required. The correct standardized cam must be used to finish the skirt to proper shape.

CAUSE . . .

Improper Installation



EFFECT:

Broken top ring, ring lands and piston edge. Note all rings have been removed.

REMEDY:

Excessive clearances allow for cocking of piston in cylinder, spreading, and twisting of rings. This failure could have been caused from careless assembly such as damaging piston and lands by excessive pressure on piston—or failure to remove top cylinder ridge. Insist that piston to cylinder tolerance be within manufacturer's recommendations. Use accurate measuring gages and recheck work.

CAUSE . . .

Acid Radiator Cleaner



EFFECT:

Strong acidic or caustic radiator cleaner attacked cylinder head gasket, ate through it and entered cylinder. Result is a corroded piston with parts of skirt eaten away.

REMEDY:

Use reliable grades of radiator cleaners and tighten cylinder heads before installing any type cleaner. Use new cylinder head gaskets when replacing heads and tighten studs with torque wrench to assure proper seating. Warped heads or blocks may help to expedite corrosion from the cleaner, when liquid works its way between block and head. Check alignment if leaking gaskets persist.

CAUSE . . .

Detonation, Improper Fitting



EFFECT:

Lands are broken, left, and top edge of piston is chipped. Piston skirt shows carbon formation, burring and pitting from excessive blowby.

REMEDY:

Adjust spark and fuel to the particular requirements of the engine and the operation. Since insufficient end gap clearance will cause a similar condition, check each ring carefully. When any fitting is necessary, use special tools.

(Turn to next page please)

MURDER in the Fleet Field

Continued from Page 89

CAUSE . . .

Acid Lubrication



EFFECT:

Note corrosion of piston top as well as skirt. Corrosion around piston pin differs from that caused by pin seizure in that corroded area here is smoother and more uniform.

REMEDY:

Select lubricants carefully, and change oil frequently. Use good grade of filter. Keep crankcase ventilation to factory standards.

CAUSE . . .

Dirty Ring Grooves



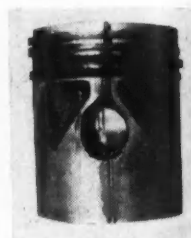
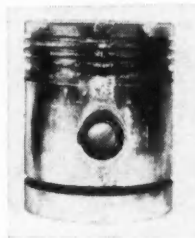
EFFECT:

Rings have broken, taking parts of the lands and the top edge of the piston with them. Scoring may be present due to broken metal particles riding between the piston and cylinder wall.

REMEDY:

Dirty engines, oil and operating conditions may allow sufficient foreign particles to collect between rings and lands to cause accelerated wear. Top ring groove will show most wear. Oversize ring grooves allow rings to cock in grooves, and eventually break. Keep lubricating oil clean through use of filters and frequent cleaning. Service air cleaners frequently. Clean carbon from grooves with proper tool before installing new rings. Keep tolerance between ring and ring groove at manufacturers' specifications.

CAUSE . . . Broken Lock Ring



EFFECT:

Metal around retainer groove, left, was probably fractured by careless installation of pin and retainer. Vertical grooves, right, extend over length of pin travel on one side of piston. Piston bosses appear to have melted away just outside the lock rings. One or more of lock rings are usually found broken.

REMEDY:

A bent or twisted rod will cause the piston to operate in a cocked position, exerting pressure on lock ring. This pushes lock ring out of groove and against the cylinder. Excessive end play in crankshaft will permit pin to tap the cylinder. See that lock rings are installed properly. Always install new lock rings on a re-ring job. If retainer grooves show wear, replace the piston.

CAUSE . . . Detonation—Excessive Heat



EFFECT:

Piston at left is burned, with scoring evident over surface of skirt. Rings are fouled with carbon from excessive heat. Center. Detonation has broken off top edge of piston. Scuffing and scoring of skirt are noted. Right. Heat and detonation has burned top of piston in localized area.

REMEDY:

Adjust fuel and spark to road and load conditions. Too high octane fuel may be one cause. Water passages in the block should be kept free of restrictions and scale. Replace clogged hoses and inspect thermostat frequently. Keep coolant at proper level. Avoid overloading and engine lugging. See that radiator shutters are used properly.

CAUSE . . . Piston Pin Seizure

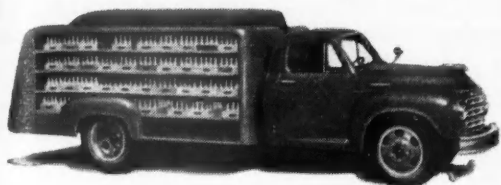


EFFECT:

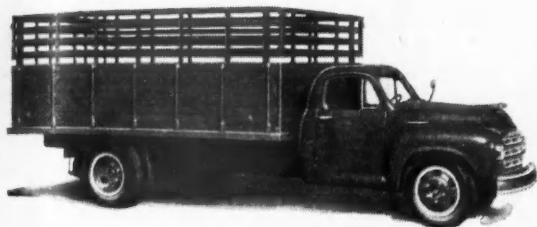
Piston skirt, left, has been torn away when the pin froze to the rod bushing. When piston cannot expand and contract freely on pin, the skirt will hammer against cylinder wall, center, with each change in direction of the rod. Outer metal surface of piston, right, has been torn away.

REMEDY:

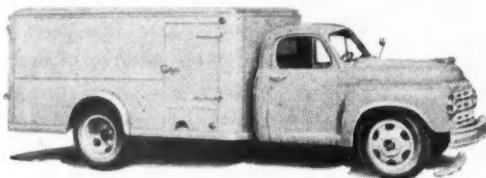
Check manufacturers' recommendations for accurate data on piston pin fits. Oscillating types will require one fit, while full floating and set screw types will take another. Cast iron and aluminum pistons will have varied requirements, so don't rely on memory.



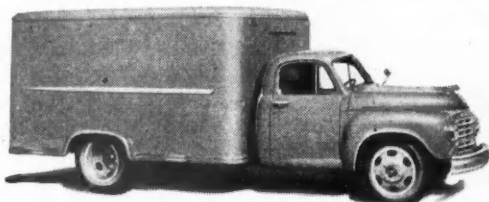
1½-ton shown with bottler's body



2-ton shown with grain-stock rack



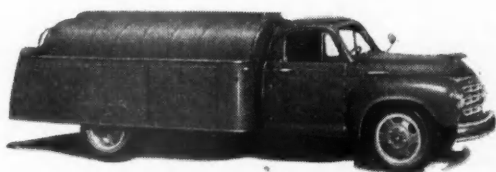
1½-ton shown with 12-foot bakery body



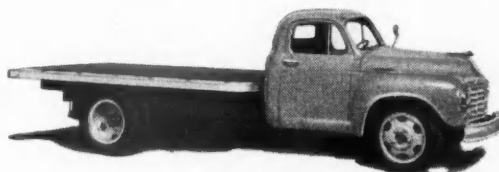
2-ton shown with 12-foot closed van



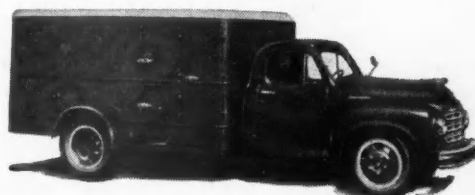
2-ton shown with 2½-3 cubic-yard dump



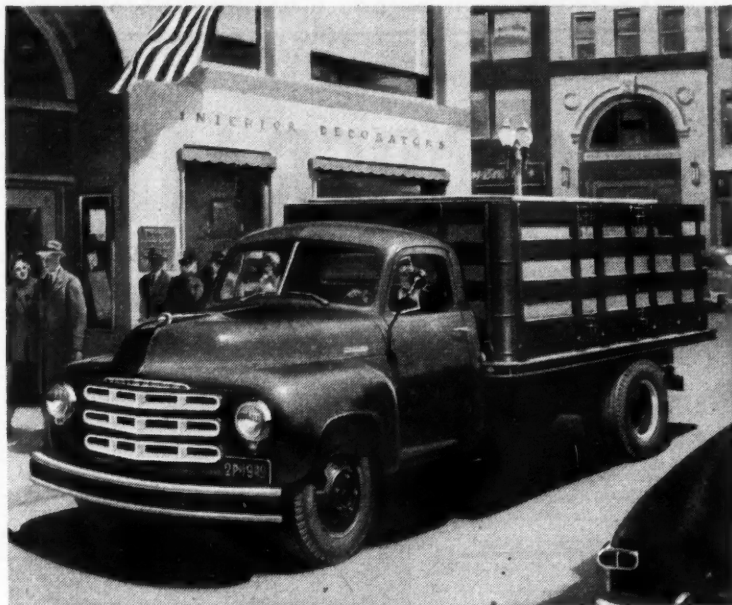
1½-ton shown with gasoline tank body



1½-ton shown with 12-foot platform



1½-ton shown with refrigerator body



1½-ton with 12-foot platform stake body

NEW STUDEBAKER TRUCKS ARE BLOSSOMING OUT ALL OVER!

**You see them everywhere you go...
doing almost every kind of work...they're
an economy dream come true!**

TRUCK operators the nation over report big savings thanks to their husky, handsome Studebaker '49er trucks.

"I never believed I'd see this kind of operating economy," says a Texas contractor.

"It looks like my 1949 Studebaker dump truck will pay for itself sooner than I expected," writes a Massachusetts man.

A big hit with drivers, too

Men who drive new 1949 Studebaker trucks say they never did a day's work with less effort.

They find these trucks new marvels of handling ease—with unique variable ratio Studebaker steering that builds up

plenty of extra leverage for turn-arounds and parking. There's a new kind of "lift-the-hood" accessibility, too.

The low floors of the new Studebaker truck cabs save a lot of strenuous climbing. The broad steps are weather-protected—enclosed inside the doors.

The wide doors have automatic "hold-open" stops. There's head room, hip room and leg room to spare—a 3-position, 3-man seat—foot-controlled "air scoop" ventilation—adjustable window wings.

Studebaker's exclusive Truck Climatizer heating and defrosting system is available at moderate added cost.

STUDEBAKER TRUCKS

Noted for low cost operation



½-ton, 6½-foot pick-up—also available are ¾-ton and 1-ton 8-foot pick-ups

COOPERATIVE PATROL

PATROL IDEA CATCHES ON



By
J. Wallace Fager
Chairman, Household
Goods Conference, ATA

Thanks to the careful planning and patient direction of an enthusiastic committee, headed by Charles G. Morgan, president of National Warehousemen's Assn., the patrol idea is beginning to "catch on" with movers. This is as it should be, for the patrol has a direct bearing on safety and insurance—today's No. 1 headache.

It is to the credit of the drivers of moving vans that an overwhelming proportion of the reports are clean bills of health. (The bad ones sometimes are "Lulu's.") Strangely, some moving men lose interest because reports are monotonously (to them) "Good."

Part of our problem is to get such operators, instead of tossing them into the files, to bring these all-clear reports to the attention of the driver involved, as a reminder that the patrol is actively at work.

THE BOSS looked up at Driver Joe Doakes. Joe was just in from a trip to New York City and had been summoned to the office.

"You've always been one of our best drivers, Joe," the Boss said. "That makes me think that the reason you weren't tops on this trip is because you were paying more attention to that dame you picked up over in Delaware than you were to your driving."

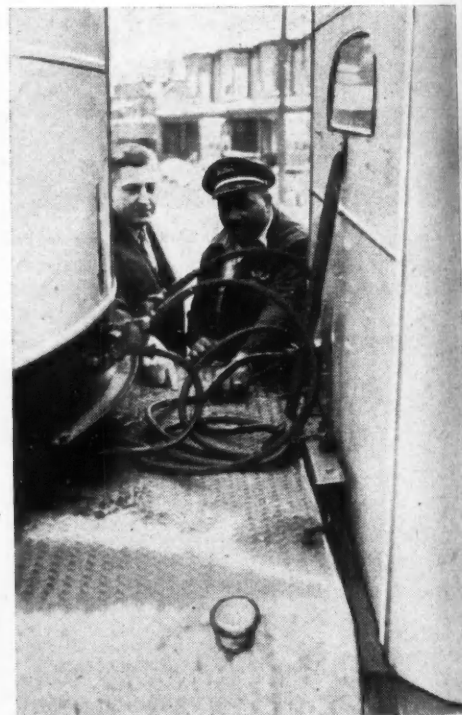
To say that Joe was surprised is to put it mildly. How could the boss here in Chicago know about that hitch-hiking woman? How could he know that Joe had let the old wagon out a few notches over in Delaware? He got the answer when the Boss shoved a sheet of paper toward him. There it was in a penciled report:

"Followed this truck six miles. Driver exceeded the speed limit at times; did unnecessary weaving which might have caused an accident. Woman passenger aboard."

It was Joe's first experience with the highway patrol sponsored by



PATROL SERVICES are paying off in many ways. A typical instance shown above is a safety inspection of a vehicle when roads are in a hazardous condition. Upper illustration shows a Miller-North Broad Storage Co. vehicle stopped by a Transport Service patrolman. Only identification of vehicle is illuminated sign shown through rear light of patrol vehicle at right



By Karl Rannells

Commercial Car Journal, Washington Bureau

ATA's Household Goods Carriers Conference. It is the business of the patrol to know about such things—and to report to Conference headquarters in Washington. Headquarters sifts out these reports and forwards them to the carrier concerned.

Patrol reports are impartial, that is, they report alike on good and bad operating conditions and practices on the roads now being patrolled. For example, here is another report submitted on the same date as the one on Joe Doakes:

"Driver and helper on this truck doing good job, especially in city traffic. Smooth stops made at signals. Follows other vehicles at safe distance."

It all started two years ago. As a rule, passenger car vehicles regard the carrier operator as about the best driver in the business, not only for expert handling of his huge vehicle but also in courtesies of the road. But it is equally true that one poor or negligent driver can tear down in a few minutes all the good will that 99 others have built up over months of driving.

The Household Goods Carriers Conference had been increasingly aware of this. Complaints had been increasing—delayed deliveries, discourtesy, disregard of insurance regulations, careless handling, and both willful and negligent violation of road rules. None of this was helpful in the matter

(TURN TO NEXT PAGE, PLEASE)

HOUSEHOLD GOODS CARRIERS' CONFERENCE			
of AMERICAN TRUCKING ASSOCIATION, INC. 1424 16th St., N. W. WASHINGTON 6, D. C. Phone—DUpont 2300			
ROAD PATROL REPORT (Confidential)			
TO: _____		Date: _____	
(Firm)		Number: _____	
Your vehicle - TRUCK <input type="checkbox"/> No. _____		TRACTOR <input type="checkbox"/> No. _____	
Cab or Truck License No. _____		TRAILER <input type="checkbox"/> No. _____	
Observer No. _____		Trailer _____	
on _____		was checked by our _____	
(Date)		(City) (State) to indicate that:	
TRAVELING _____ on Hwy. No. _____			
(Direction) (Name of Street or Hwy.)			
near _____ at _____ M.			
(Place) (Time)			
Speed _____	MPH - Legal Speed _____	MPH Riders _____	Sex _____
<input type="checkbox"/> Driving Careful	<input type="checkbox"/> Equipment Defects	ROAD - No. of Lanes _____	
<input type="checkbox"/> Reckless	<input type="checkbox"/> Loading Defects	Condition _____	
<input type="checkbox"/> Discourteous	TRAFFIC WEATHER _____		
Remarks: _____			
PARKED at _____			
(Street or Hwy.) (Name of Place) (Time) M			
Reason: _____			
Vehicle - Empty <input type="checkbox"/> Part Load <input type="checkbox"/> Full Load <input type="checkbox"/>			
Remarks: _____			
LOADING <input type="checkbox"/> Began _____ M			
Completed _____ M			
Carry (Pt.) _____			
UNLOADING <input type="checkbox"/> No. of Helpers _____			
Stairs _____			
Elevator _____			
Appearance of crew _____			
Remarks: _____			
HOUSEHOLD GOODS CARRIERS' CONFERENCE 1424 - Sixteenth St., N. W. Washington 6, D. C.			
SENT TO: _____		REPORT NO. _____	
COMPANY NAME _____		DATE OF REPORT _____	
PERSON _____		CITY _____	
ADDRESS _____		STATE _____	
Failure to receive original report as identified by this numbered coupon should be immediately reported to this office.			



These illustrations show three of the various services performed on the highways by the patrol service organizations. At left, Patrolman Bill Scheffer of Transport Service, Inc., checks vehicle's brake hose connections with Miller's driver, Bernie. Above, he checks condition of flares and other safety devices. Right, he checks tire pressure



Two or three fleet highway patrol services, or two or three patrolmen of one organization may report on one vehicle in a day's run. These reports are consolidated at Household Goods Carriers' Conference office and sent to subscriber on the Road Patrol Report shown above

COOPERATIVE PATROL

Continued from Page 93

of either insurance rates or good will.

The matter was discussed at the Chicago convention in 1946 and the proposal made and approved that some action be taken. A committee was named to find a solution; the final answer was inauguration of the Highway Patrol. The patrol of today, however, was not the first step. The immediate problem before the committee was to find a starting point.

One of the most frequent complaints received concerned delays in transit. It was found that some of the trucks were apparently making unnecessarily long lay-overs at parking lots and terminals. The causes were varied and numerous.

First on Tentative Basis

FEELING its way, the committee then employed checkers on a tentative basis. Their jobs were to observe way stations, parking lots and terminals several times a day and to report to the conference. From these reports, the carriers could determine where—and often why—the delays were occurring.

From this modest beginning, it was a relatively simple matter to develop the road patrol as it exists now—a continuous checking of the highways and parking lots in assigned areas. Duties have been expanded to include road reports on drivers and vehicles as well as parking.

The patrol men engaged in patrol work are employed by professional firms which work under contract with the conference. In order that there may be no bias, the patrolmen seldom know which companies are being serviced. However, in order to eliminate unnecessary reporting and paper work, the patrol is furnished with a list of carriers for which no reports are required. These are the concerns which do not subscribe to the service or which have specifically asked not to be included.

Frequently, however, reports are made on non-subscribers, over and above duty. These are usually one of two extremes—either unusually good or very bad cases of road operations. In both instances, the conference forwards these reports to the carrier concerned without comment, although they may be followed up later with letters citing advantages of such service on a regular basis.

TRANSPORT SERVICE

Drexel Building
PHILADELPHIA 6, PENNSYLVANIA

ROUTE OBSERVATION REPORT

Date:
Time: Standard Daylight A.M. P.M.

Driver's Name:
To: Name:
Address:
Bus: Truck: Tractor: Trailer semi: full: Lic. No.: State:
Observed: Direction of Travel: Route No. (or Street):
In Vicinity of: State: Speed: (Low) MPH, (High) MPH

WEATHER	ROAD	EQUIPMENT DEFECTS
..... Clear	..... No. Lanes	..... Body
..... Cloudy	..... Paved	..... Tires
..... Rain	..... Gravel	..... Tail Gate
..... Snow	..... Dirt	..... Doors
..... Fog	..... Smooth	..... Mirrors
.....	..... Rough	..... Wipers
.....	..... Slippery	..... Horn
.....	..... Lighted	..... Headlight
.....	..... Dark	..... Step Light
.....	..... Heavy Traffic	..... Tail Light
.....	..... Normal Traffic	..... Clearance
.....	..... Light Traffic	..... Markers
.....	..... Curve	..... Reflectors
.....	..... Hill	..... Turn Signal
.....	..... Alignment	.....
.....	..... Wheels	.....
.....	..... Buses	.....
.....	..... Air Hose	.....
.....	..... Tires	.....
.....	..... Duals Rub.	.....
.....	..... Load	.....

NEGLIGENCE, VIOLATIONS AND FAILURES OF DRIVER

CONDITION	DID NOT OBSERVE	INCORRECT	DID NOT USE	PARKING
..... Drinking	..... Stop Sign	..... Safety Zone	..... Flares	..... Lunch Car
..... Not Alert	..... Road Sign	..... School Zone	..... Flags	..... Road Side
..... Male Pan.	..... Traffic Signal	..... School Bus	..... Fuses	..... Gas Station
..... Female Pan.	..... R. R. Crossing	..... Center Line	..... Signals	..... Ferry
..... Physical	..... Trolley Car	..... Speed Limit	.....	..... Motor Run.

See other side for remarks
Observer:

Above is the Route Observation Report used by Transport Service patrolmen. It contains a tabulation of negligence, equipment defects, violations and other failures of driver on the highway. But more reports are favorable than critical of driver. When his operation of the vehicle is praiseworthy, patrolmen reports the details on reverse side

A special form for equipment checks is used by Transport Service when a number of defects are found. Driver is obliged to sign form to eliminate arguments later

TRANSPORT SERVICE, INC.
Vehicle Inspection Report

COMPANY NAME: DATE:
TRUCK: TRACTOR: SEMI-TRAIL: FULL TRAIL: TIME:
..... lbs pressure air gauge (when stopped) Headlights
..... lbs pressure air gauge (when ready to leave) Tail & Stop Light
..... Turn signals
Tire pressures Condition Body lights
..... lbs front L Reflectors
..... lbs front R Horn
..... lbs rear inside R Windshield wiper
..... lbs rear outside R Heater & Defroster
..... lbs rear inside L Hand brake
..... lbs rear outside L Foot brake
..... lbs trailer inside R Brake hose
..... lbs trailer outside R Steering arm and Tie-rod
..... lbs trailer inside L Windshield & Door glass
..... lbs trailer outside L Sashers
..... lbs tandem inside R Flares
..... lbs tandem outside R Fuses
..... lbs tandem inside L Flags
..... lbs tandem outside L Fire extinguishers
..... Wheel lugs Tachographs & Speedometers

REMARKS:

Driver's Name (signature) Log
Helper's Name (signature) Log

SAFETY SPRINGER

Growth of the patrol service has been slow and cautious. At present, 16 patrolmen are under contract. Eleven are operating along the eastern seaboard, covering highways from New York to South Carolina and some portions of Pennsylvania and Ohio; five operate in the west, covering main highways in California, Nevada and Arizona.

Daily reports are sent the HGCC office at ATA headquarters in Washington. There it is a rule that all reports must be screened and forwarded to the carrier concerned on the same day received.

(TURN TO PAGE 148, PLEASE)



**WHERE DEPENDABILITY
IS A MUST...**

**YOU'LL FIND GRAMM
REFRIGERATED VANS**



...

GRAMM equipment has conclusively proved ability to provide the dependable day-in, day-out service that assures more profitable operation. You will find GRAMM trailers popular among leaders in all fields of motor transport. For example, in the refrigerated transport field, the large fleet of Malkin Motor Freight Co., Cambridge, Mass. includes many GRAMM refrigerated vans. Malkin Motor Freight Co. is one of the leading Eastern operators of refrigerated equipment.

GRAMM refrigerated trailers are heavily insulated with finest materials and are available in all popular lengths with either single or tandem axles. These vans come equipped with choice of any type and make forced air or refrigeration units.

GRAMM

A NAME FAMOUS FOR HIGHEST
QUALITY IN TRANSPORT EQUIPMENT

GRAMM TRAILER CORP. • Delphos, Ohio

SOLD BY LEADING INDEPENDENT DISTRIBUTORS AND DEALERS

SAFETY FLASH:

Say, boys, those children on the street are an extra hazard now. It's spring and they will be everywhere. Motor scooter riders and bicycle acrobats are the most serious hazard, perhaps, but the little tyke who darts out between parked cars could be just as bad.

Don't forget that whenever you speed a little in town you are fighting Old Man Reaction Time and endangering every child on the road. At 20 miles per hour the average driver covers 18 feet after seeing the danger and before he can get his foot on the brake. Eighteen feet may mean tragedy for some little tyke. You haven't a chance unless you can stop!

Don't trust children to think--think for them!

Dan Dugan

May 3, 1948
No. 20

One of a series of
"Safety Flashes" warns
drivers of timely hazards



By Dan S. Dugan

Dan Dugan Oil Transport Co.,
Sioux Falls, S. D.

SAFETY

How Dan Dugan Does It

With a current record of one chargeable accident per 200,000 miles this tanker fleet is out to do better. Some of the means described here include analysis of hazards, safety committee and bulletins

▼ SAFETY WORK with us does not end with exhorting our drivers to follow accepted safety practices and posting safety rules on the bulletin board. Our program is a continuous campaign against all unsafe practices wherever they may be found and the elimination of safety hazards whether they exist on the highway, in our shop, or on our trucks.

You can't fight for safety on one front and ignore it on another front.

Recently, we engaged in a series of conferences with city and state officials regarding a hazardous traf-

fic condition in a certain town in our territory — a hazard through which our drivers safely drove every day.

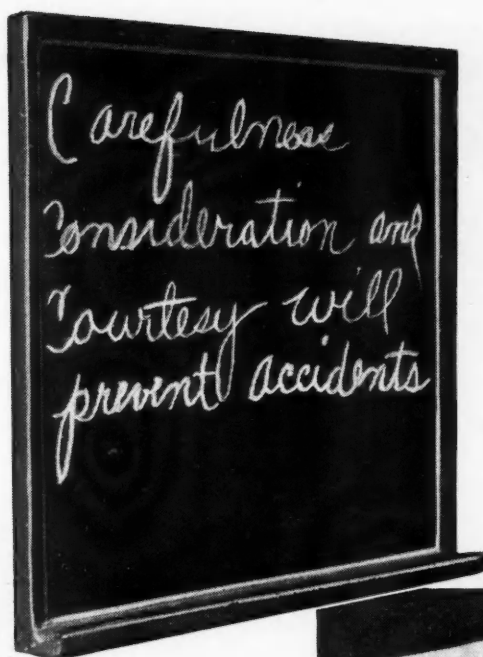
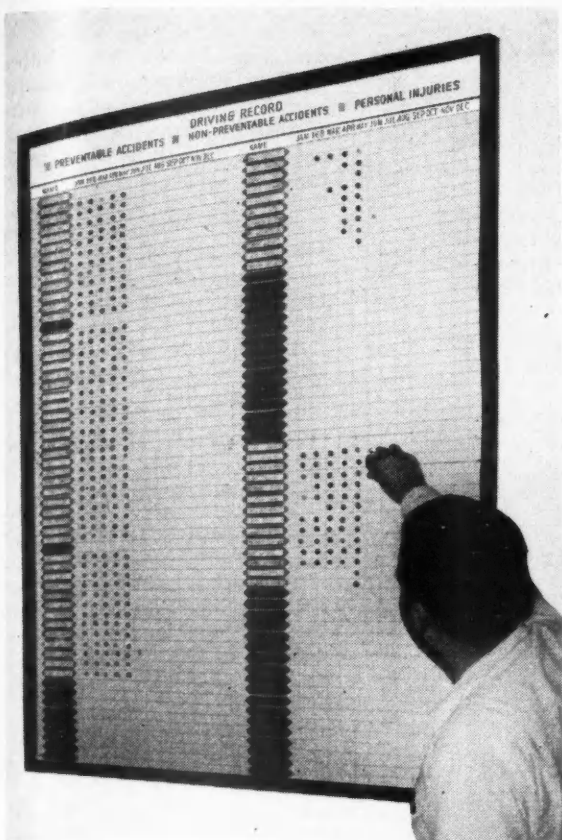
These conferences were genial and cooperative meetings among men seeking the best way to provide safer conditions. We spent our own money to conduct research and make a survey of the past accident record of that particular intersection, and were able to tell the public and the officials something that they didn't know—the fact that accidents on that location had cost a total of \$300,000 of

somebody's money. They knew there had been accidents but they didn't know how many or what they cost.

In this particular case we were able to offer a recommendation in the form of a map which suggested a change in through-street designations, relocation of stop streets, and a splitting up of travel to reduce congestion. We are happy to report that there have been no accidents there since.

If we only reduce a hazard ever so slightly we have made progress. Our drivers know they can bring in suggestions and get full cooperation and results. We expect our drivers to observe all the rules of the National Safety Council, all the rules of the ICC, to drive defensively, and be able to go through any accident-infested intersection without an accident because they are simply minimum requirements of a professional driver.

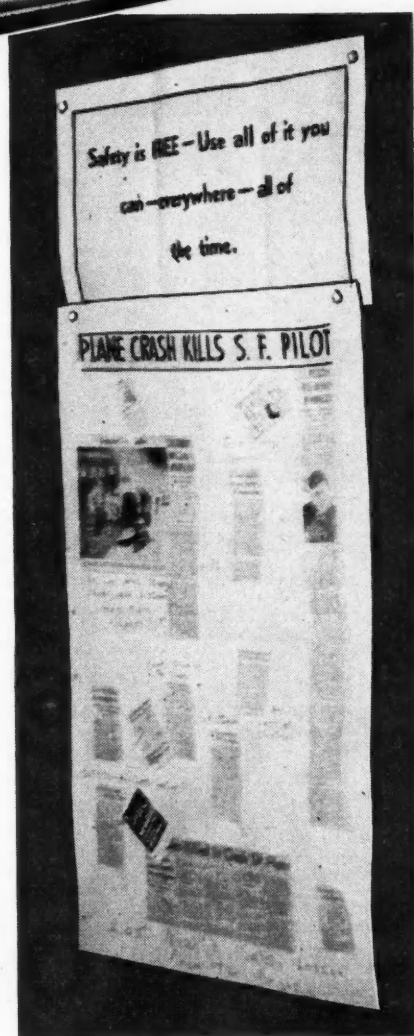
But we don't expect a driver to be subjected to a correctible hazard every day without trying to do some-



LEFT, Blackboard in driver's room is used for mottos, slogans and other safety information

BELOW, Another board in driver's room is used for posting pertinent clippings concerning safety

LEFT, Colored thumb tacks opposite driver's name tells record at a glance. White tacks signify "no accident"



thing about it, and we don't expect a driver to put up with a safety liability on truck, trailer or road without trying to do something about it. We expect him to point the dangers to the rest of the drivers and to us so that all of us, working as hard as we can, collectively and cooperatively, may accomplish some manner of improvement or elimination of the hazard all together.

More Doing, Less Talk

WE have had so much talk of safety in the transportation business that some of us may have overlooked doing safety to some extent; leaving it perhaps in other hands, or assuming that the results were as good as could be obtained. But let me say to every operator of trucks that if we do not operate on a safe basis and continue to improve our safety programs, the day may come when we will no longer be able to operate.

We must have permanent and progressively better programs that increase the margin of safety on our

road operations, that insure more careful selection of drivers and better driver training, and a program that eventually eliminates the hazard of faulty and ill-kept equipment. Our maintenance programs should be so good that there ought never to be a chargeable accident from the failure of equipment.

While it is a burdensome task to hammer day and night on safety and the maintenance of equipment, yet our own hammering has reduced our reportable accidents from two per 100,000 miles to less than one per 200,000 miles; a 400 per cent increase in efficiency, which we now call our minimum. It is less than one-

(TURN TO PAGE 158, PLEASE)





INTRODUCING . . .

. . . D. A. GEIL as Omaha regional manager, of the Dodge Division, Chrysler Corp.

. . . L. H. LUNDSTEDT, former sales manager of the A. L. Hansen Mfg. Co., now associated with the Cleveland Hardware & Forging Co. of Cleveland, Ohio.

. . . LLOYD L. BOWER as chief engineer of Waukesha Motor Co., succeeding JAMES B. FISHER, retired.

. . . D. M. SKIRVING as sales manager of The Electric Auto-Lite Co.'s Wire Division succeeding H. R. BUTTS who was recently named general sales manager of the Merchandising Division. KENNETH L. GACKEL is new asst. sales manager of the Wire & Cable Division.

. . . E. E. KROGSTAD who heads International Harvester's newly created motor truck district sales office at Oklahoma City. Other recent Harvester appointments include these motor truck district managers: C. H. DONOVAN at Parkersburg, W. Va.; E. M. FORD at Birmingham, and B. G. JONES at Louisville.

. . . JIM TEASLEY as sales manager of the truck tank division of the Snyder Tank Corp. plant at Birmingham.

. . . GEORGE M. BUNKER as president of The Trailmobile Co. succeeding WADE T. CHILDRESS who remains as chairman of the board.

. . . EARL H. LEWIS as Rochester Branch Manager for The White Motor Co. He previously served in the Cleveland area.



. . . MAURICE J. METTEL, former assistant states attorney, as vice-president of the Ranger Cartage Co., Chicago.

. . . H. H. SWAIN, former Midwestern regional sales manager for the Thermoid Co., as Central States regional sales manager for the American Hammered Piston Ring Dept. of Koppers Co., Inc.

. . . NOAH O. GRESHAM, as White Motor Co. wholesale manager in the Kansas City Region.

. . . RALPH HUNSICKER of Standard Wheel & Rim Co., Harrisburg, Pa., as president and ROBERT BROXON of Rim & Wheel Service, Cincinnati, as vice-president of the National Wheel & Rim Association.

. . . T. A. ROBERTS as Western regional sales manager of Brown Trailers, Inc.

. . . JOSEPH F. GRUCA and WARREN H. SEEDS who have been named branch managers for Fruehauf Trailer Co. at Chicago and Grand Rapids, respectively.

. . . RODNEY KOX as special field representative for the Four Wheel Drive Auto Co.

. . . FRANK T. SIERSMA as vice-president in charge of automotive sales for the Lintern Corp.

. . . H. C. TELFORD has been named manager of the Timken branch in Cincinnati.

(TURN TO PAGE 103, PLEASE)

US Wants You, Mr. Jobber,

TO TELL THE FLEET
OWNER --- HOW HE CAN
SAFELY GET TO HIS
DESTINATION --- AND BACK

U. S. Axle also wants you, Mr. Jobber, to tell the fleet owner that U. S. carries a complete inventory—assure them of immediate delivery—that U. S. Axles are proven tough and long-lasting by the records they have established in the past.



FLEET OWNERS
CALL YOUR
JOBBER TODAY

FOR FURTHER DETAILED
INFORMATION, WRITE TO

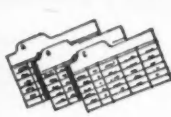
**US
AXLES**

**THE U. S. AXLE
COMPANY, INC.**

POTTSTOWN, PENNSYLVANIA



TOUGH AXLES
FOR HEAVY LOADS



COMPLETE
INVENTORY



FAST
DELIVERY

WRITE FOR
CATALOGUE ON
AXLE SHAFTS FOR
SURPLUS ARMY
TRUCKS.

Introducing

Continued from Page 100

... SEWARD T. SALVAGE as sales promotion manager of The Timken Roller Bearing Co.

... GEORGE V. HUNTER as advertising manager of the Radiator Specialty Co., Charlotte, N. C.

... PAUL V. DIMMICK as Central Division sales manager of The American Coach & Body Co.

... B. JOHN HEISER as president of the Central Ohio Steel Products Co., succeeding GILBERT L. STIEFEL, deceased.

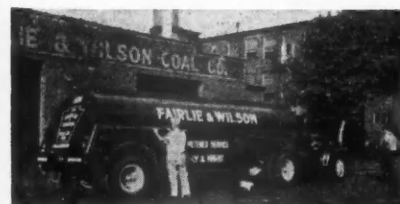
... EVERETT C. (Pete) SHINGLETON as assistant product manager for automotive, industrial and farm services tire sales in the Automotive, Aviation and Government division of The B. F. Goodrich Co.

... CHARLES S. DENNISON as assistant general sales manager of Willys-Overland Motors. E. L. ANDERSON has been named the company's sales promotion manager and F. F. BALDWIN has been placed in charge of the truck section of the truck and equipment sales department.



... WALTER L. HAYES as assistant general sales manager of Federal Motor Truck Co. supervising activities in the East, South and Southwestern United States.

Dolled-Up Refueler



These are before and after "shots" of the same trailer—a 2500-gal Air Force refueling unit. It is a self-powered job purchased from War Assets and doing a fine job for Fairlie & Wilson Coal Co. in the Newark area

... GEORGE F. VARCA as factory sales and engineering representative for Keystone Wagon Works, Philadelphia.

... W. L. GOODMAN who succeeds W. B. PYLES (retired) as manager of the Transportation department of General Petroleum Corp., Los Angeles.

... CLIFFORD H. STANTON as administrative and traffic consultant and WARREN B. BUCK as assistant traffic manager, for Refined Syrups & Sugars, Inc., Yonkers, N. Y.

... Major General (ret.) WALTER A. DELAMATER as vice-President of the Heli-Coil Corp. of Long Island City.



... ARTHUR F. PETTET (left) as general manager of Fram Corp. At the same time DAVID C. BUELL was named general production manager and BRUCE C. MILLER general purchasing agent.

... SAM S. MULLIN as president of The Cleveland Pneumatic Tool Co., succeeding LAWRENCE E. GREEN who will continue to serve as chairman of the board.



This Rolling Stone Gathers Moss

And Here's Why—It Has **BUELL** AIR HORNS

"Moss," "Green Stuff," Dollar Profits . . . that's what this truck makes for Central Concrete Company of St. Louis. Gathering profits while "rolling stone" is easy *if* the truck can make fast deliveries of heavy loads through city traffic. That's where air horns help by cutting slow-downs . . . but why Buell Air Horns?

HERE'S THE REASON

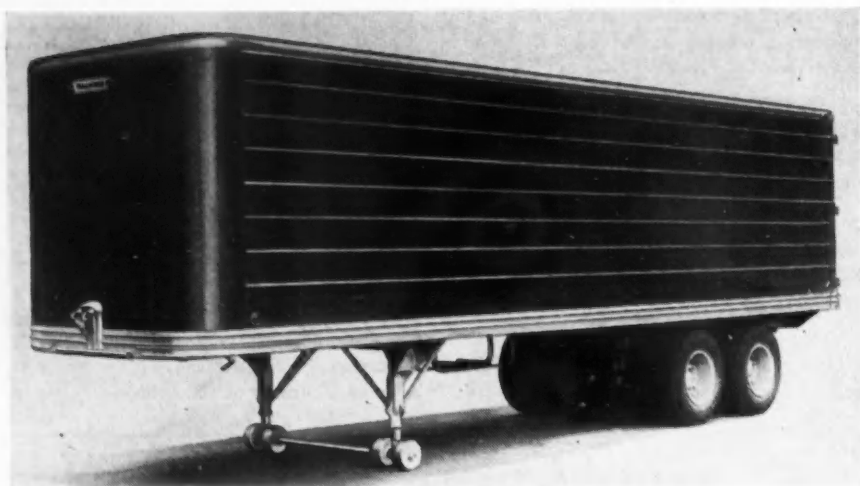
Only Buell Air Horns have the "free-floating *disc*" principle of producing sound. This means you get more volume and power from a Buell than from any other horn of equal size. You make no periodic adjustments for air pressure or tone. And Buells can give a soft, polite signal with as little as three pounds of air pressure! You have *power* when you need it . . . *control* when you need it.

These are the reasons why manufacturers and truckers alike specify Buell Air Horns. These are the reasons why Buells Are A Better Buy—Better Buy Buells.

Write for literature and fleet discounts

**Standard equipment on Autocar Trucks and GMC Buses.
Approved for installation on all air-equipped trucks and buses.**

BUELL MFG. CO., 913 W. 49th Place, Chicago 9, Ill.



Trailmobile's

New Model AA All-Aluminum Trailer

Features include 25% weight reduction, fewer parts, extruded shapes and special alloys

VA NEW ALL-ALUMINUM, van-type trailer, combining fine appearance with weight-saving factors that permit greater loads, has been developed by The Trailmobile Co.

The new Model AA Trailmobile weighs approximately 25 per cent less than comparable units of steel construction. It is a practical combination of special alloys, extruded forms and special assembly methods.

Because extruded aluminum shapes can be scientifically reinforced and material increased at points of greatest stress, it is possible to build in greater strength than in similar pressed metal sections. For example, while any bent metal originally was of uniform thickness, it tends to weaken at the point of bending. An extruded form of similar shape can be made with greater thickness of metal where the strains are maximum. This extra thickness of metal actually becomes a reinforcement within the shape itself.

The extruded forms used in the All-Aluminum Trailmobile are scientifically designed to proportion the metal where it will give the greatest carrying capacity for a given weight. This is the same principle that is used in airplane construction.

The roof cove, side posts and roof bows form a unified, load-distributing top member which not only cuts down the weight and the number of parts that have to be riveted or welded to make the ordinary roof cove, but also eliminates the weakness of joints and leaky roof openings. It provides strength to carry its part in distributing the entire load of the structure and its contents.

The frame constructed with cross bolsters on 22-in. centers and special unit construction at both front and rear. All are securely tied together by the side rails and rear cross members which are equipped with deep gussets.

The laterally corrugated side struc-

ture strengthens the sheets against buckling and eliminates rattling, while pure aluminum bonded to the outside surfaces of the aluminum alloy panels keep them corrosion free.

The interior has been designed with great care to obtain smooth surfaces, without obstructions which could damage merchandise in light, fragile containers. Roof design assures full loading height and no loading loss.

Reinforced Rear Assembly

THE rear assembly is heavily reinforced with a deep section having specially designed sub-frame. The rear corners are sturdily reinforced with special alloy aluminum castings, heavily ribbed to take the abuse of bumping docks, posts, trees, etc.

Both hinges and hinge butts are of extra heavy construction to stabilize the door in any position. They also permit the doors to open flat against the sides of the body where fasteners are provided to secure the doors in the open position. Door locks are of the cam type with cam locks at both top and bottom.

Special—continuous rub-rails protect the side walls and understructure from damage. Aluminum alloy corner castings are heavily ribbed to take the abuse of bumps without disturbing the alignment of the load distributing side rails, rear members and corner posts. The corner post is a single, extruded form. It cuts out all the extra weight of many pieces usually required to build a corner. The flange to fasten the plywood lining, outside weatherstrip, interior reinforcing, and outside posts are all one piece.

Aeroloy Wheels

ADDING materially to the weight saving of the new model is Trailmobile's unique Aeroloy wheel. These wheels are cast of the same type alloys and by the same methods used in the construction of heavy bomber landing wheels to withstand the shocks of constant landing impacts. The alloy is cast in permanent, heat-controlled steel molds, with cooling scientifically controlled to insure castings of uniform density and strength. After casting each wheel is heat-treated for maximum strength, X-rayed and chemically tested. This wheel is 55 lb lighter than the conventional trailer wheel.

Truck Specifications

Showing New Models and Revisions Since Last Issue

The specifications of new truck models tabulated at left and the revisions noted below have been received from truck manufacturers since publication of the Commercial Car Journal Truck Specifications Table in the February, 1949, issue. Readers are requested to make note of these changes. Publication of the entire Specifications Table will be resumed in the April, 1949, issue.

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY COMMERCIAL CAR JOURNAL

Chevrolet

All serial number prefix letters have been changed from F to G and from R to S (i.e. model FP becomes GP and model RP becomes SP, etc.).

Revised chassis list prices on certain models are as follows:

Model GP \$925 Model SJ \$1150
GR 1020 SK 1185
GS 1090 SL 1330

Compression ratio on all Thrift-Master engines (216 cu in.) has been raised from 6.5 to 6.6 and on all Load-Master engines (285 cu in.) from 6.6 to 6.7.

Dodge

The following changes in engine designations have been made although there are no changes in other engine specifications:

Truck Model	Engine Model
(c.o.e.) B-1-HM	TX-152
(c.o.e.) B-1-HMA	TX-152
(c.o.e.) B-1-HH	TX-148
(c.o.e.) B-1-HHA	TX-148
(c.o.e.) B-1-HHM	TX-152
(c.o.e.) B-1-HHMA	TX-152

The following changes in transmission designations have been made in these school bus models:

Bus Model	Transmission Model
B-1-FS	TS-148
B-1-JS	TS-150
B-1-RS	TS-156

Duplex

See new model added at left.

Ford

All serial number prefixes have been changed from 8 to 9.

The following changes have been made in rear axle designations:

Truck Series	Rear Axle Models
F-2	8D
F-3	8Y
F-4, F-5	8T
F-6	8TH
F-7	8Q

Rear axle gear ratio range in high on the F-4 series is now 5.14 to 5.88. The rear axle on F-6 series is now of the hypoid type instead of spiral bevel and has a single ratio of 7.2. The rear axle of the F-7 series now also has a single ratio of 7.2.

Frame reinforcements on series F-7

and F-8 are 8.5 x 2.56 x .15 in. and extend from front spring rear brackets to rear spring front brackets. See new models at left.

FWD

On model YU the gross vehicle weight has been changed from 28,000 to 30,000 lb and the maximum authorized tire size from 11.00/20 to 12.00/20.

Kenworth

Model 528 has been deleted and new models are added at left.

Marmen-Herrington

Gross vehicle weight of model LD7-4 has been changed from 4700 to 5800 lb. Chassis weight of model R5-COE6 is 7410 lb.

Peterbilt

On model (D) 390, standard tire size is 12.00/24 and maximum tire size is 14.00/24; rear axle is Timken SD472W, and rear axle ratio is 8.07. Rear axle ratio of model (D) 380 is also 8.07.

See new model at left.

Reo

On models 30-A, 30-B, 31-A and 31-B two-speed rear axles are available.

See new models at left.

Truckstell

Frame side rail dimensions have been revised as follows:

Truck Model	Side Rail
F2X28	8 x 2.8 x .46 in.
F2X29-0 (c.o.e.)	8 x 2.8 x .46
F2X28-7	9 1/2 x 3 x 1/2
F2X34-8	
F2X40	
C2X28	
C2X29-0 (c.o.e.)	

See new models at left.

Willys

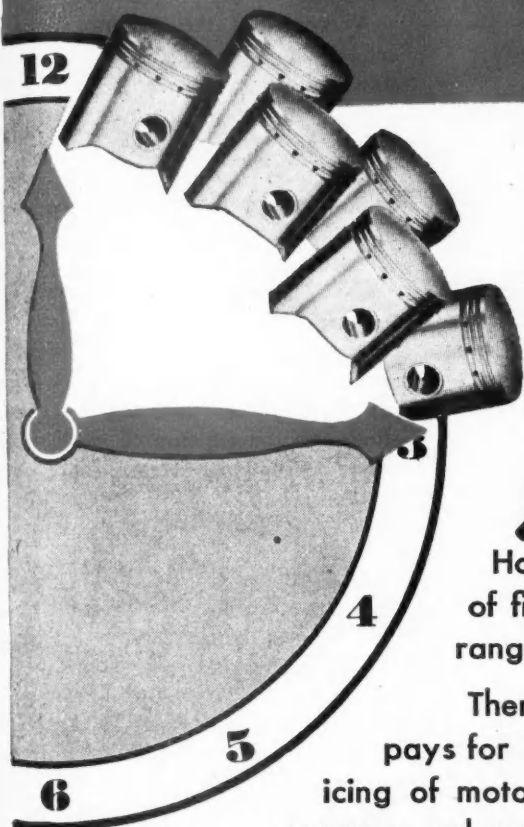
Model designation of the Universal Jeep has been changed from CJ-2A to CJ-3A.

See February issue, page 103
for specifications of other models

New Truck Registrations by Makes by States*

STATE	Auto-car	Brookway	Chevrolet	Diamond T	Divco	Dodge	Federal	Ford	FWD	GMC	International	Mack	Oshkosh	Reo	Sterling	Studebaker	Ward La France	White	Willis	All Others	Total
Alabama	Dec. 1		639	4	1	173	3	315		145	138	9		12		107		8	135	8	1,697
12 Mos.	1		7655	76	26	2070	37	5096		1870	2452	160		245		928		151	1480	62	22,309
Arizona	Dec. 3		180			81		87		58	51			1		33		6	22	11	514
12 Mos.	3		1795	10	26	796	15	1450	2	484	463	13		89	7	407		58	368	56	6,042
Arkansas	Dec. 1		108			9		22		25	8					10			23		206
12 Mos.	6		6166	98	1	1654	28	4496	4	1241	1640	45		301		738	1	93	1767	18	18,289
California	Dec. 198	31	1407	24	10	706	4	705	3	438	392	7	3	3	5	428	1	41	150	41	4,388
12 Mos.	198	31	18020	411	438	9653	68	13274	75	6039	5896	298	9	233	91	4534	1	457	3624	659	64,008
Colorado	Dec. 1		163			77		91		57	68			4		31		5	49		580
12 Mos.	7		3484	136	41	1317	59	2747	36	877	1757	19		83		521		64	1126	11	12,285
Connecticut	Dec. 8		211			88		93		63	60			9		28		4	65		717
12 Mos.	119	137	2464	179	143	1036	100	1966	16	677	1213	227		90	9	518		107	830	72	9,903
Delaware	Dec. 2		41			23		39		14	19					12		5	12		170
12 Mos.	13	14	892	24	18	445	3	785	1	271	416	24		14		134		31	123	30	3,238
Dist. of Columbia	Dec. 24	20	151			44		48		40	23			4		11			11		337
12 Mos.	24	20	1023	45	100	367	26	972		375	536	52		45	1	125		29	204	22	3,887
Florida	Dec. 23		591			153		334		84	172			6		81		13	178		1,686
12 Mos.	23		5718	140	34	2059	61	4495	4	1119	1740	196		135		923	2	183	1558	167	19,557
Georgia	Dec. 1		536			73		128		62	46			4		36		2	24		821
12 Mos.	5	1	9377	260	6	2625	65	7013	3	1680	3185	222		307		1259		202	1926	61	28,207
Idaho	Dec. 1		91			2		79		44	52			4		49			50		422
12 Mos.	1		2060	111	12	819	34	1588	4	661	1021	49		152		698	2	54	931	61	8,258
Illinois	Dec. 3		846			340		384		1	357			14		161		57	185	11	2,545
12 Mos.	158	10	15814	1074	374	5659	206	9739	25	3110	8247	377		749	9	2504	4	659	3652	277	52,646
Indiana	Dec. 1		607			175		310		180	324			15		200		34	130		2,007
12 Mos.	3	20	7229	282	173	2672	115	5566	8	2153	4177	128		288		1825		462	1903	192	27,196
Iowa	Dec. 1		739			277		428		1	118			19		126		22	168		2,328
12 Mos.	2		7798	412	58	2722	29	5813	17	1469	4072	123	4	327		1253	2	234	1989	34	26,358
Kansas	Dec. 1		504			149		252		101	111			7		89		3	83		1,324
12 Mos.	1	3	8023	230	23	2090	137	4901	4	1255	2709	31		270		1182		114	1213	60	22,446
Kentucky	Dec. 27		618			124		336		111	199			16		110		4	262	10	1,821
12 Mos.	27		6375	269	49	1727	137	4723	1	1461	2536	85		357		822	8	113	3408	72	22,170
Louisiana	Dec. 1		210			32		92		42	33					28		2	59		504
12 Mos.	4		5152	160	29	1533	15	4091	8	969	1706	87		105		736		103	1251	112	18,061
Maine	Dec. 2	3	189			46		88		61	62			4		30		1	43		539
12 Mos.	4	21	2246	10	29	611	41	1736	1	667	966	76	1	140	6	383	1	21	516	21	7,497
Maryland	Dec. 1		305			91		140		102	67			7		49		8	24		836
12 Mos.	59	99	4335	84	71	1476	83	2807	8	898	1610	190		154	5	544	4	134	665	39	13,267
Massachusetts	Dec. 27	7	232			127		149	1	60	85			6		28		11	46		833
12 Mos.	159	146	4405	225	428	2134	46	8431	20	1171	2219	334	6	167	62	854	14	196	789	72	17,878
Michigan	Dec. 8	2	1023			513		433		388	295			25		230		38	148	21	3,593
12 Mos.	54	46	11082	208	365	5315	217	10311	6	3502	3317	157		420	1	1636	5	410	2392	124	39,588
Minnesota	Dec. 2		548			287		297	4	116	167			7		144		3	80		1,691
12 Mos.	54	1	6733	286	90	2724	168	5382	42	1367	3699	126	12	208	9	1369	13	244	1408	61	23,996
Mississippi	Dec. 1		503			172		228		114	116			6		80		7	137		1,381
12 Mos.	1		6288	96		1690	27	4337		1424	1784	125		168		712		85	1320	37	18,093
Missouri	Dec. 5	7	10644	204	153	3471	32	7237		2112	3600	89		227		118		21	198		2,468
12 Mos.	5	7	10644	204	153	3471	32	7237		2112	3600	89		227		1223	1	303	2218	85	31,611
Montana	Dec. 1		156			43		76		57	56			4		33		2	56		497
12 Mos.	7		2658	183	14	987	79	2148	11	692	1430	29	2	186		563	5	64	1359	36	10,453
Nebraska	Dec. 1		423			121		191		70	130			4		86		9	112	4	1,190
12 Mos.	3		4794	426	8	1721	35	3337	12	981	2611	83	1	91		841		133	1551	36	16,664
Nevada	Dec. 1		23			8		8		9	9					12		1	9		83
12 Mos.	4	1	445	18	1	238	2	349	4	129	180	5		5		145		6	114	12	1,654
New Hampshire	Dec. 4		295			5		107		66	109	28		13	3	40		7	39		807
12 Mos.	10	17	1121	19	42	432	11	899	1	264	432	72		44	5	169		21	263	16	3,338
New Jersey	Dec. 20	16	501			230		322	1	204	178	48		14		88		43	117	18	1,865
12 Mos.	222	392	6374	402	425	2652	150	4805	22	2458	2987	637	1	193	10	1191	12	401	1733	152	25,219
New Mexico	Dec. 1		254			54		113		86	40			7		27		5	36		633
12 Mos.	2		2183	53	4	599	21	1385	2	508	630	26		28		263		47	306	25	6,082
New York	Dec. 60	63	1079	54	35	611	6	561	6	323	421	108	5	46	1	177	5	54	279	27	3,921
12 Mos.	611	1066	14109	1134	902	8442	451	10893	123	5149	7848	1857	67	895	51	2852	153	1106	4232	505	62,446
North Carolina	Dec. 3	1	1144			234		417		133	123			21		135		13	122	13	2,383
12 Mos.	50	3	9437	105	63	3031	76	6721	135	1176	2404	524		231	2	1339		305	2197	255	28,054
North Dakota	Dec. 1		85			43		75		21	67			1		30			47		381
12 Mos.	9		2201	152	1	739	67	1904	7	418	1451	51	2	73		485		28	700	4	8,283
Ohio	Dec. 135	22	13306	383	421	5583	231	10239	27	3618	6364	401		501	1	2153	6	958	3155	251	47,755
12 Mos.	4		7276	65	46	2122	26	5464	53	1245	3126	53		245		908	1	168	1696	44	22,544
Oregon	Dec. 2		287			127		165		116	75			3		83		3	96		1,015
12 Mos.	67	1	3883	114	24	2040	67	2772	6	1432	1912	137		117	34	993		186	1405	370	15,560
Pennsylvania	Dec. 22	54	1558	42	4	683	16	862		441	431	95		39	1	292		79	308	26	4,953
12 Mos.	425	760	15134	757	139	7356	320	12295	12	4900	7270	1253	25	712	51	3137	8	1241	4136	340	60,271
Rhode Island	Dec. 5		72			3		40		13	32			4		11		1	17		240
12 Mos.	105	26	1119	76	148	556	10	839		307	684	61	2	72	7	222		83	280	43	4,600
South Carolina	Dec. 1		438			105		181		71	57			3		49		5	76		1,002
12 Mos.	2		4744	46	5	1294	19	2968		762	973	103		117		482		106	882	53	12,536
South Dakota	Dec. 1		149			64		83		38	112			1		25		1	59		548
12 Mos.	1842		181			5		810		446	1593	19		107		394		29	979	25	7,872
Tennessee	Dec. 6	1	480			118		171		81	105			4	</						

**Now You Can FIT PINS
In a Set of 6 PISTONS
In Less Than 15 MINUTES***



*Using New Bushings and Standard Pins

**Accuracy Guaranteed
Within .0001"**

You can prove to yourself that Sunnen Wet Honing is the fastest and most accurate method of fitting pins. Just ask your Sunnen jobber to arrange a demonstration right in your shop.

Then you will see how this new honing machine pays for itself quickly—saves time and speeds the servicing of motor overhauls. You will see how the guaranteed accuracy and perfect alignment assure a pin fit that means extra miles of quiet, trouble-free driving—and lower maintenance costs.

If you have a Sunnen Bushing Grinder, bring its performance up to date by converting to wet honing with the LBN-640 Conversion Unit. It increases honing speed 2 to 3 times.

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SP-438R

SUNNEN HONING

"The Mechanic's choice for fast and accurate Pin Fitting"

Revitalized Maintenance

Continued from Page 77

points are part of the dynamometer equipment for leveling up the engine.

While the flexible coupling has a large amount of flex in any direction less wear results if the engine is nearly perfectly aligned. This is also better for engine testing.

We found it took a considerable amount of time to get this alignment completed until we developed a gage which has reduced alignment time more than half. It's a simple thing. One side of the shaft between hydraulic load and the flexible coupling con-

sists of a circle in perfect alignment. One end of our gage clamps around this circle. An arm, welded to the clamp, extends over the coupling to a similar circle on the engine side. A bolt and lock-nut on the end of this arm is adjustable to make contact with this circle. When the bolt point is in alignment all the way around, the engine is in alignment and the flexible coupling operates at minimum flex. The gage can be rotated around this circle by hand as the work of lining up the engine progresses.

A record of the operating characteristics of the engine is kept on a standard form. We usually run our engines on the stand under load for eight hours before they are passed.

In engine rebuilding, we have developed several rules which have eliminated breakdowns and delays. For instance, we have not found it practical to remove more than .030 in regrinding crankshafts. On our sleeved engines we prefer to remain at standard measurements and replace the sleeve rather than rebore. This eliminates the expense of stocking a large number of oversize parts on these engines.

New Shop Layout

AT the time we installed our new shop equipment we redesigned our job and added more floor space. We adopted the drive-through principle and it is now arranged so that no units can be blocked in the shop except at one spot. Naturally, we watch this spot and only put the jobs there that have to remain for some time. In every place except this one a truck can either drive through the shop or back out.

To further augment the principle of straight line production, we have equipped the shop with an intercommunicating system which places every station in constant communication with my office. I have arranged my office so that I can see all over the shop through glass windows.

When a question comes up of whether a job can be handled in a certain department, I can learn in an instant just how many jobs are ahead, or whether we can borrow a man from one job to make a front-end alignment and still get the job out on time.

The whole system has been of great
(TURN TO PAGE 114, PLEASE)

Let "TINY" help you

SAVE MONEY on TRUCK MAINTENANCE



"Tiny", here, is our personification of another of the Palm Brothers all-star team...low-cost, high-quality truck decals. "Tiny" is a small eater of profits... but when it comes to quality, he's right on top!



As a user of mobile advertising on your trucks, you'll be interested in learning "What Decals Can Do For You". Write for this informative, illustrated booklet today! We'll include, as long as they last, our popular new folder, "A Moving Story For Truck Owners". Then get set for spring spruce-up...order your truck decals now! Address your request to Dept. 913.

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THE PALM BROTHERS DECALCOMANIA COMPANY

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**SHULER AXLE COMPANY, Inc.
Louisville, Kentucky**

Since 1915, Manufacturers of: One-Piece Tubular and Square Trailer Axles, Front Axles, Machinery Trailer Axles, Machinery Front Axles, Front-Steer Trailing Axles, Heavy-Duty Brakes (Mechanical, Vacuum and Air), House Trailer Axles, Miscellaneous Forgings for Heavy-Duty Trucks and Trailers.

DETROIT OFFICE: 8424 Woodward Ave. • EXPORT DIVISION: 38 Pearl St., New York

WEST COAST WAREHOUSE: 1280 Forty-Fifth St., Oakland

Revitalized . . .

Continued from Page 112

benefit in employee relations. The results of their work is more satisfying because better jobs are turned out. Their working conditions are pleasant, and more work can be done at less expenditure of energy which is a factor that everybody likes. Job interruptions from unexpected breakdowns, which formerly ran our costs

up, have been eliminated. Every man likes to finish a job he starts, and he likes to finish it where he starts it. When work has to be interrupted to move trucks and locations changed to make room for another job, we have confusion, a slowed down routine, and usually a yard full of trucks—trucks that ought to be on the road. The end is worth the means in profit and satisfaction—no matter how much equipment you have to buy.

END

(Please resume your reading on P. 78)

MOLD-BLOK

BRAKE LINING



ONE OF THE FIRST FORMS OF A WHEEL WAS A WOODEN DISC WITH HOLES THROUGH WHICH A STICK COULD BE INSERTED TO EXERT A RETARDING FORCE.

- NON SQUEAL
- LOWER COST PER MILE TO OPERATE
- UNIFORM CO-EFFICIENT OF FRICTION
- NON-SCORING OF DRUMS

MOLDED MATERIALS DIVISION

OF

CARLISLE CORPORATION

RIDGWAY, PA.

Time Out for Play

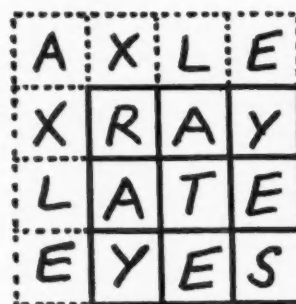
See Page 22

Quick, Henry, The Fleet!

ANSWER: 49

EXPLANATION: The total fleet should of course be equal to 100 per cent, but the owner's instruction makes it come out 98 per cent. The borrowed truck therefore equals the missing 2 per cent. If one truck equals 2 per cent, then 28 per cent equals 14 trucks, 26 per cent equals 13 trucks, 24 per cent equals 12 trucks, and 20 per cent equals 10 trucks. 14 plus 13 plus 12 plus 10 equals 49, the number of trucks in the fleet.

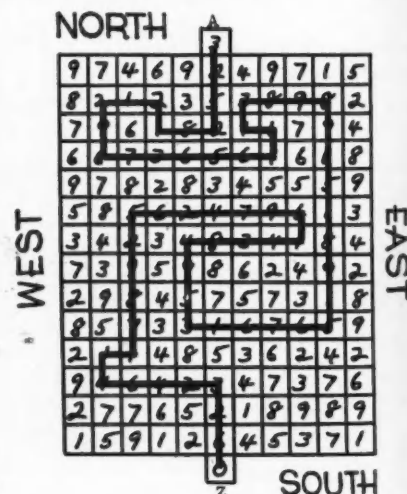
Squaring Things Off



Gear Shifts

1. OPERATING
2. GARAGES
3. SHORTAGE
4. GENERATOR
5. SIGNATURE
6. BEARING
7. ARRANGE
8. GREASING
9. PORTAGE

A-Maze-ing Milk Route



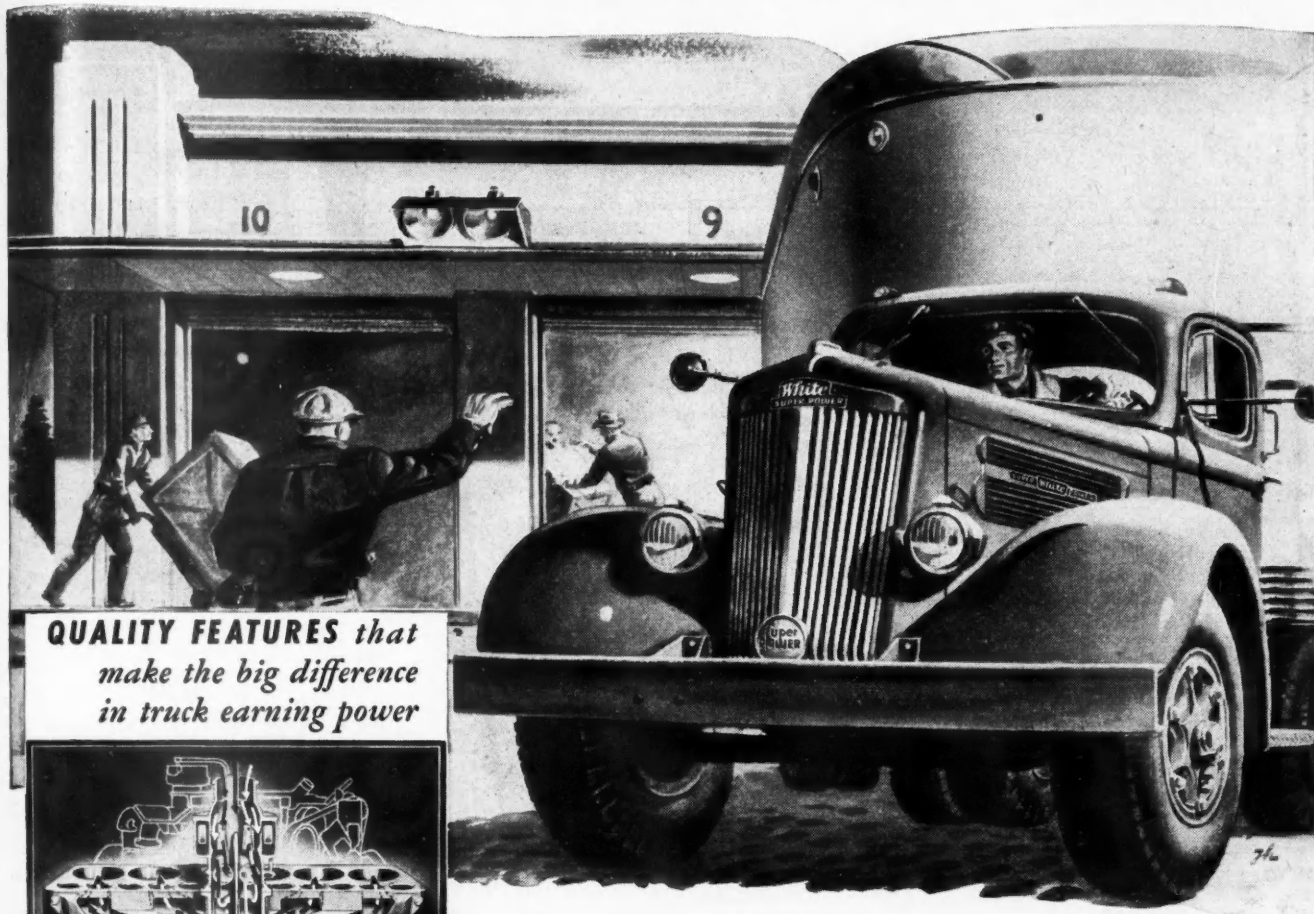
Nit and Wit

WIT: "SO I TOLD HER I LOVED HER AND THAT WE'D BE MARRIED IN THE SUMMER."

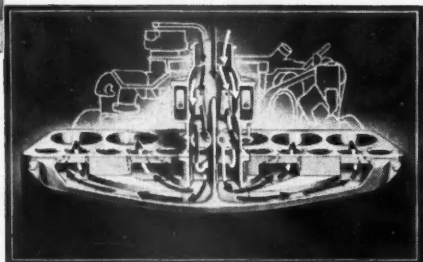
NIT: "JULY?"

WIT: "NO, I MEANT IT."

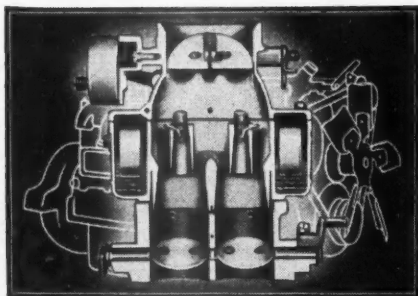
HERE IS WHY WHITES SAVE ON GASOLINE.. EVERY MILE



QUALITY FEATURES that
make the big difference
in truck earning power



SUPER POWER MANIFOLD meters fuel-mix equally to each cylinder, through ports of varying size, depending upon distance traveled by mixture. Result: improved performance and fuel economy.



DUPLEX CARBURETOR ... Right half feeds three right cylinders above; left half feeds the other three. Assures better distribution of fuel-mix to all cylinders for economy and fast acceleration.

CREATIVE ENGINEERING ... as expressed by White in the new Super Power WC Series ... affects all three basic factors of truck earning power—fuel economy, maintenance cost and long life. This, and not individual "features", is what makes White Super Power the best investment you can make in truck transportation, when price and earning power are compared. On the operating records of thousands of truck owners everywhere, in all lines of business, White Super Power, correctly applied to the work to be done, always *earns more, costs less*. For complete information about White Super Power in terms of your own business, see your local White Representative.

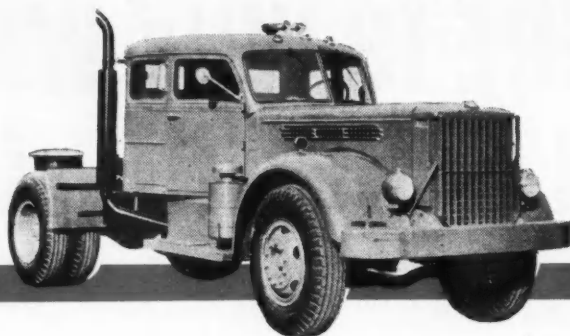
THE WHITE MOTOR COMPANY
Cleveland, Ohio
THE WHITE MOTOR COMPANY OF CANADA LIMITED
Factory at Montreal



FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS

Diamond T

Introduces Extra-Heavy
910N Series



FOLLOWING several months of production experience, the Diamond T Motor Car Co., has announced its Model 910N Series extra-heavy-duty diesel-powered trucks, available in four-wheel and six-wheel types.

Basic ratings are as follows:

MODEL	910N	910NSW3012PA	910NSW456P 910NSD462P
Maximum GVW (lb.)...	38,000	40,000	50,000
Maximum GTW (lb.)...	60,000	78,000	78,000
Chassis Weight (lb.)	12,300	15,000	16,300

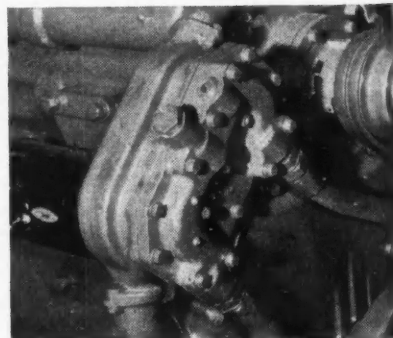
* 45,000 lb for off-highway use.

The powerplant is the NHB Cummins diesel with an output of 200 hp at 2100 rpm governed speed. Equipment includes a 12-volt electrical system, tachometer, two oil filters, oil cooler of heat exchanger type, and a fuel filter. The air intake system is a special Diamond T feature with a 3-qt. oil-bath air cleaner located outside the hood to provide cooler air.

The Timken FE Series front axle is standard on all models. The Timken U200-P full floating double-reduction rear axle is standard on the four-wheelers; while the Timken U300-P, of double-reduction two-speed type, is optional.

(TURN TO PAGE 118, PLEASE)

Oil cooler of heat exchanger type is standard equipment on the 910N series



Easy way to jack up profits: sell

Scott-Atwater HYDRAULIC JACKS

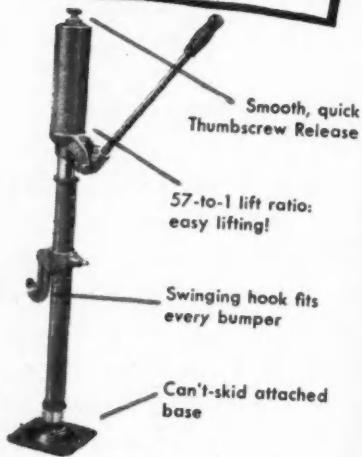
Up Go Jack Sales when you feature these five fine Scott-Atwater models: they give your customers the qualities *their* customers want. Fast, easy operation... compactness... year-after-year dependability... honest construction... and more unique, sales-lifting features than we can pack into this page... these are the jacks Scott-Atwater builds!



MODEL K: 2-ton capacity, weighs 106 lbs.



MODEL 549: 5-ton; MODEL 349: 3-ton;
MODEL 7AJ: 1½-ton



MODEL 136: 1½-ton capacity

FIND OUT MORE about the Scott-Atwater line of hydraulic jacks... write to

Scott-Atwater MANUFACTURING CO., INC.
Minneapolis 13, Minnesota

MAKERS OF OUTBOARD MOTORS • HYDRAULIC AXLE JACKS • BUMPER JACKS • SERVICE JACKS



DEPENDABLE

CHAMPION

SPARK PLUGS



← America's Favorite!

The spark of good-fellowship flashes nowhere more brilliantly than on American highways—in the hearts of the men who drive our trucks. Courteous, skillful, responsible, they are a class of men whose opinions on spark plugs can be highly regarded. Independent surveys taken among them show that they prefer and use Champion Spark Plugs in vast majority, because they represent the ultimate in quality, value, performance and dependability. Champion Spark Plug Company, Toledo 1, Ohio.



FOLLOW THE EXPERTS

SPECIFY DEPENDABLE CHAMPIONS FOR YOUR FLEET

Listen to the CHAMPION ROLL CALL . . . Harry Wismer's fast sportscast every Friday night, over the ABC network

Diamond T

Continued from Page 116

The lighter-rated six-wheeler has the Timken SW3012PA dual drive tandem axle with eight parallel torque rods. It is of worm drive type and is limited to high speed highway service applications.

The extra-heavy six-wheeler model is fitted with the Timken SW456P (worm-drive) or SD462P (double-reduction) dual drive tandem axles

which have greater capacity for off-highway service.

(Note: When 11.00x20 tires are used on six-wheelers, overall width at rear is 96¼ in.)

A Spicer 8255 five-speed over-drive, constant-mesh main transmission is used on all models. The aluminum housing saves 119 lbs. Also standard on all except the two-speed axle model is the Spicer 8031 Series three-speed auxiliary transmission, giving the vehicle 15 forward speeds.

The clutch is a Spicer 14-in. two-plate model.

Westinghouse air brakes with ¾-in. linings at the rear and ⅜-in. at the front are supplied on all models, brake areas being dependent upon axle model. Auxiliary equipment consists of a 2-cyl, 12-cu ft air compressor, and two large capacity air reservoir tanks. The hand brake on all models is the heavy-duty Tru-Stop ventilated steel-disc type, 16-in. diameter with four shoes.

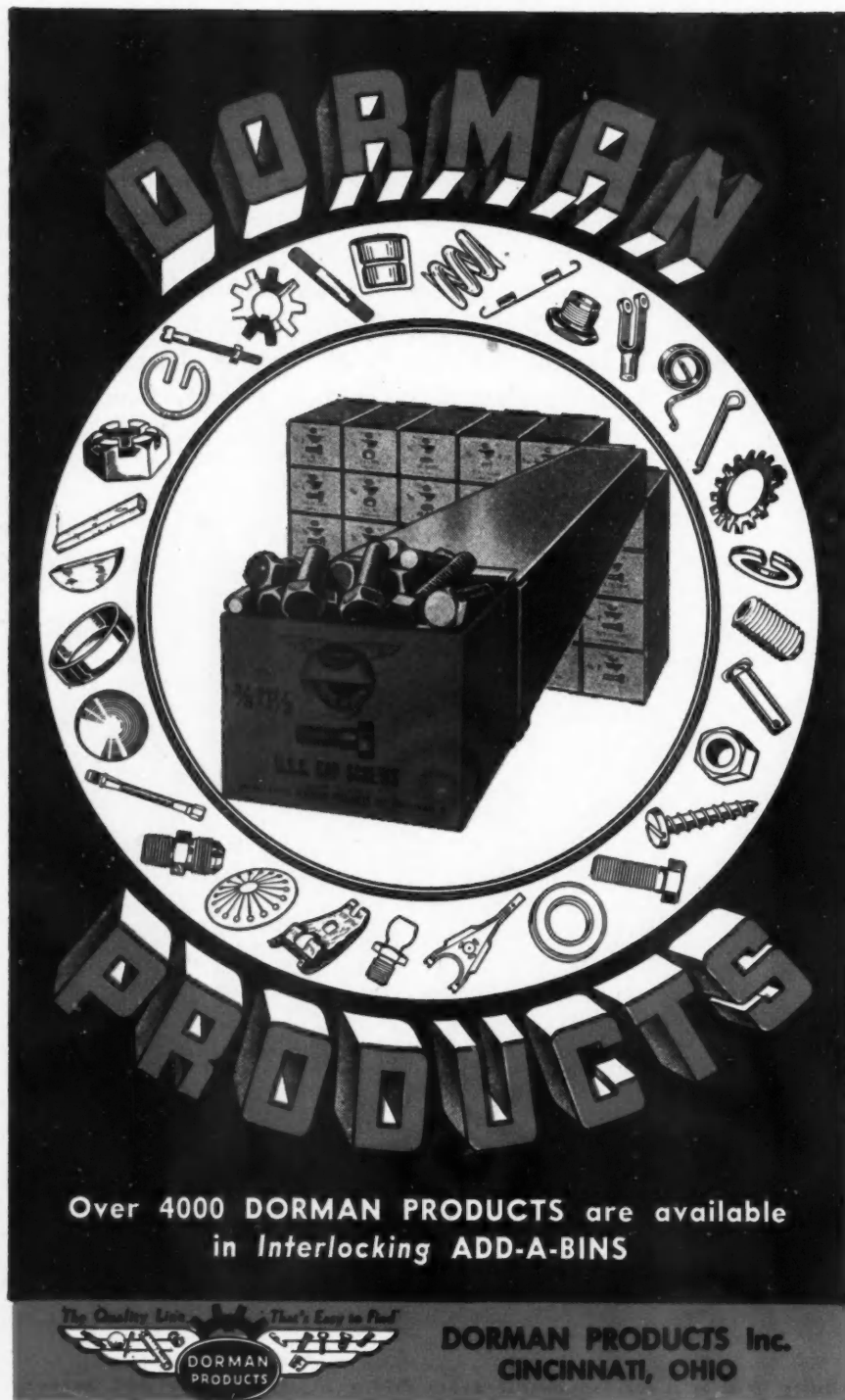
Steering is of cam-and-twin-lever type with ball bearings in the steering head, the cam follower being roller-bearing mounted. Universal joints are of latest type Spicer needle bearing design of extra large capacity.

A feature of the exterior treatment of these models is the use of heavy gage quick-detachable front fenders announced earlier.

Quiz Answers

(See page 35)

1. An average of 8,000 patents pertinent to the automotive industry are granted each year.
2. Automation designates automatic feeding, unloading and handling of work to, from and between production machines. Perfect automation would result in a ground casting turning into a completely machined valve guide bushing without being touched by human hands.
3. Mufflers coated on the inside with aluminum last 20 times as long as the conventional steel assemblies now used.
4. a) bonnet, b) luggage boot, c) built up, d) wheelbrace, e) hood.
5. 40,000,000, according to a survey presented at a recent NAITD convention.
6. 1,500,000 new vehicles. Prices are also affected because in one automotive plant each idle day costs the company \$1 million simply for plant maintenance and other expenses.
7. False. The Kettering engine has a 12 to 1 compression ratio but the current models are only 7:25 to 1. This is the highest permissible with the fuels now generally used.
8. A liquid coolant, injected from an accessory tank, is reported to raise conventional fuels 10 to 20 numbers.
9. The spectrograph because this value is only reached and measurable for a very short time.
10. True. The total pressure on the head of a piston 3 inches in diameter reaches a total of 2800 pounds; nearly a ton and a half.



Over 4000 DORMAN PRODUCTS are available
in Interlocking ADD-A-BINS

The Quality Line... That's Easy to Find

DORMAN PRODUCTS Inc.
CINCINNATI, OHIO

Are You in a Lather Over CLEANERS?

Continued from Page 37

the hard sodium soaps) would be fairly satisfactory and economical but for two drawbacks: Hydrolysis and scum.

Hydrolysis increases the activity of alkaline ions in aqueous solution by electrolytic dissociation with a resulting increase in OH ion concentration and higher PH. The toughest enamel can be streaked and dulled by hydrolyzed soap solutions.

Scum is caused by the formation of insoluble lime soap during the rinse. True, now there are water softeners and sequestrants, but they cannot be economically added in sufficient quantity to prevent all lime soap formation in the late rinse stage. Surfaces washed with soaps do not dry without water spots. This is often remedied by the addition of a wetting agent to liquid or paste truck washing soaps.

SYNTHETIC DETERGENTS, unless fortified by alkalis, soaps or both, are less efficient cleaners than soaps. They do a job on frequently washed and meticulously maintained small delivery vehicles in clean neighborhoods. They are almost universally used for cleaning passenger cars. Many of them will not attack decorative and protective waxes of the hard simonize type.

All of them penetrate quickly and deeply into the surface of new synthetic enamels and, possibly, may do harm by emulsifying the oil, the resins and plasticizers, and by discoloring the pigments. They form organic soaps with the resins esters and they form various metallic salts which will, in time, leach out. They are often quite safe in the low concentrations recommended, but not when solutions are "stepped-up" to perform tough cleaning jobs.

INORGANIC ALKALINE SALTS make no suds and are impractical except with soaps or synthetic detergents. Most of the effective "soapless" commercial fleet cleaners contain one or more alkaline salts. The main objection to alkalis are: Saponification of oil or resin, which results in leaching, and formation of residual crystals in the pores of the paint; such crystals often grow unnoticeably until they reach a preponderance sufficient to dull the paint film and, eventually, kill it.

SOLVENTS are two-step cleaners. An oil phase is carried to dissolve the oils that are in the dirt. Then the entire mixture of dirt and solvent are emulsified by the rinse water. Sometimes non-emulsifying water-miscible solvents are found in liquid aqueous cleaners.

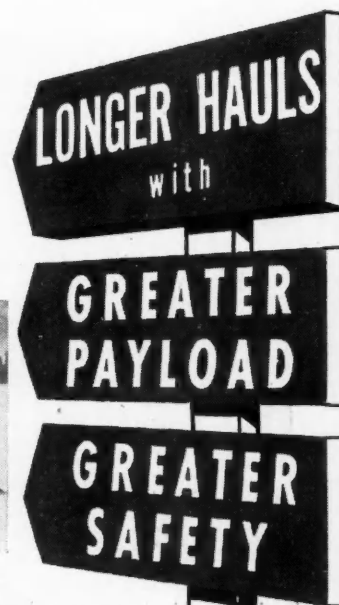
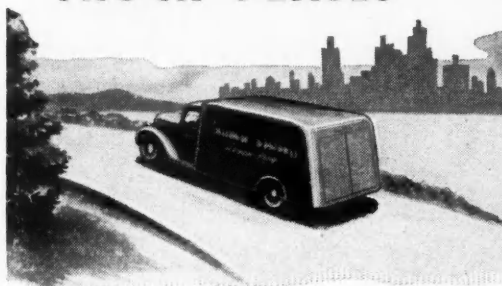
The main drawback of solvent-emulsion type of cleaners on present enamels is probably that they stain light finishes, and that they always have an objectionable creosote-like odor.

At present only the solvent type of cleaner offers an elimination of the surface agitation problem, and its attendant labor mechanical expense. How-

ever, they are expensive, since they use a kerosene or fuel oil diluent instead of water. To avoid possible straining they should be followed immediately by another rinse with an aqueous solution cleaner. Many of the solvent cleaners on the market injure the finish in time, but safer cleaners of this type have appeared in recent months.

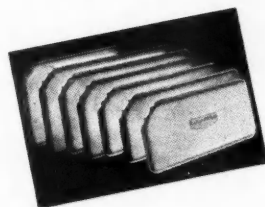
ACID CLEANERS are not comparable in efficiency to the other four types for commercial motor vehicles. They are indicated where unsaponifiable and non emulsifiable types of dirt occur—as
(TURN TO NEXT PAGE PLEASE)

KOLD-HOLD TRUCK PLATES



The road to profits in the transportation of perishables is well marked by the signposts of KOLD-HOLD advantages. Because KOLD-

HOLD HOLD-OVER Plates maintain specified safe temperatures around the clock, they make possible longer routes . . . without the risk of spoilage. Because of their compactness and streamlining, they fit into any truck body with the greatest economy of space . . . thus increasing payload.



OPERATING COST - less than 10¢ per day!



Since KOLD-HOLD Plates contain no moving parts, they will give a lifetime of maintenance-free service. Economy of manpower is possible because undelivered loads need not be removed from the truck at night and reloaded next day. A simple "plug in" connection makes the truck a cooler room on wheels. WRITE TODAY for the latest KOLD-HOLD catalog.

KOLD-HOLD

Jobbers in Principal Cities

KOLD-HOLD MANUFACTURING CO.,

620 E. Hazel Street, Lansing 4, Michigan

... CLEANERS

Continued from Page 121

fine metallic dust in steel towns buried in the paint as rust. The disadvantages are: Relative inefficiency, eventual corrosion underneath moldings and rivets, and destruction of clothes of personnel.

It should be quite obvious from this description of cleaning materials that unless the commercial vehicle operator is a trained chemist, or has laboratory facilities at his disposal he would be

wise to trust the selection and compounding to a reliable supplier.

Surface Friction

SURFACE friction of washing materials varies, although figures are not available to measure it quantitatively. Probably the soaps have the lowest friction.

Two factors are effected by this friction coefficient, or, to reverse it, the lubricating qualities of the solution. The lower the friction the lower will be the probable damage to paint by grit im-

bedded in brushes. Also the less will be the effect required in operating the brushes and the greater the output of vehicles cleaned per man-hour.

Practical Value of Suds

NOW we come to the characteristic of washing which has always been looked upon as the most essential by car washers, or for ages, people who washed anything. That is *suds*. It is possible to clean thoroughly without suds, but there is a psychological instinct common to all of us to want suds.

However, it is possible to have too many suds in car washing. After all suds are air bubbles, and do not clean.

Outside of the mental effect, the practical value of suds is that the washer can see them on the vehicle. He knows when he has covered all surfaces with solution and whether he has rinsed all the solution off. Furthermore, a good, creamy suds which stays put improves dirt softening and reduces scrubbing. This not only save possible damage to paint, but may reduce cleaning costs.

Since the suds-forming material is the most expensive ingredient in cleaning materials, those purchased strictly on price may not hold their suds. This results not only in more scrubbing, but in excess use of the material by the washers in a vain attempt to obtain satisfactory suds.

All modern car cleaning materials result in rinse water drying in sheets instead of drops. This eliminates the labor operation of chamoising off the rinse water before it dries. The only surfaces for which this is not true are the chromium-plated trimmings.

END

(Please resume your reading on P. 88)

HERE'S EVERYTHING YOU WANT

**IN A
HEAVY
DUTY
JACK**



This man is not wrestling the weight of a heavy truck wheel. The weight of the wheel is carried in the channel of the **DRUM SAFETY JACK**. He did not crawl under the truck to spot the jack—**DRUM'S** automatic spotting device took care of that. Speed up tire and wheel changes with a **DRUM SAFETY JACK**—approved by leading fleet operators, tire companies and truck manufacturers.

**SAFE
QUICK
EFFICIENT**

Models for every purpose:
1½-3-5-8-12 TON sizes.



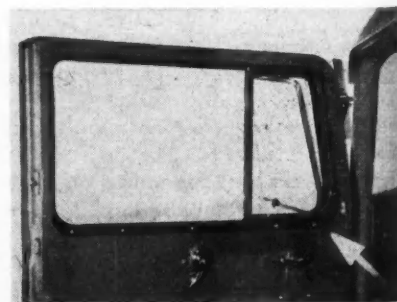
See your jobber or write to:



THE CLEVELAND PNEUMATIC TOOL CO.

3769 East 77th Street • Cleveland 5, Ohio

Autocar Ventilator



Glass ventilator wings are being built into new Autocar models in lieu of adjustable windshields. The ventilators are of the friction type and should not need adjustment. However in case they become loose a hole in inner door panel (arrow) permits ready tightening. Production is limited to deluxe cabs at present, will be extended to entire line at a later date.

Save Time and Money With —

Genuine Ford Parts

Because Genuine Ford Parts are *right* for Fords—made right to fit right and last longer—replacement jobs go faster when Genuine Ford Parts are used. And when time is money, that's a double saving for Ford Car and Truck operators. See your nearest Ford Dealer for fast delivery.



Genuine Ford Shock Absorber with "Ride Control" Adjustment

Fits 1928-1948 Ford Passenger Cars

... Made Right ... Priced Right!

Made to Ford famed hi-standard precision and quality. Rotary vane type, double-acting hydraulic. The "Ride Control" feature permits quick manual adjustment to suit individual preference and road conditions. Synthetic thread seal and floating packing prevent leaks. Packing spring gives constant automatic pressure take-up.

**Genuine Ford Parts...
Right for FORDS!**



FORD MOTOR COMPANY

Cab Design Critique

By Carl G. Seashore*

Institute of Public Safety
The Pennsylvania State College

ON THE PLUS SIDE we may give the entire industry a pat on the back for the continuing improvements of truck cabs in both appearance and function. However, the designer and the manufacturer would be the first to be satisfied with the status quo. It is only in the attempt to build on the existing progress that the following thoughts are presented:

The driver should be able to enter from the right side. An interior arrangement of the cab should be such that the driver can swing conveniently from right to left. Insulating materials should be made of such materials not subject to fire. Electrical wiring should be constructed so that wires will not need to be bent for removal or repair of instruments or parts. It is desirable from an operating and cost standpoint to provide space for carrying a readily accessible fire extinguisher of ample size to combat electrical, motor, gasoline and tire fires.

Facilities must be considered in original design which will permit heating of adequate capacity and in desired directions. Instruments should be so located that the driver can observe them with a minimum shift of his eye from the road. Sealing against drafts can be improved.

Noise control would appear to be a matter of both sound-proofing and shock-proofing. Vibration problems can be solved by insulating the instrument panel itself from the surrounding frame by means of vibration dampening mounts, properly engineered to overcome the known frequency and amplitude problems.

The development of a mirror system which will reflect in the desired directions, without vibration, and capable of simple but positive adjustment to each individual, will eliminate a large percentage of accidents.

Seating adjustability has to be ample to permit a wide range of movement forward and backward, up and down, and in varying the angle of the seat back, to accommodate the optimum percentage of the drivers. A

factor that has been too little considered is the height of the seat cushion under load. It is necessary for the driver to see the full 360 deg. in

a horizontal plane, plus an upward and downward shifting of the eyes from this horizontal plane. We recognize the sales appeal of streamlined and rounded shapes, but it may be that the automotive industry may have to reconsider this design to improve visibility. It would appear that new design might incorporate corner post structural members of a narrow shape, perhaps even over-laid at the corners with a transparent medium which would tend to minimize the blind spot.

KD C890 De Luxe Fog Lite

Big 5½" sealed beam lamp. Adjustable head. Bumper bar clamp. Clear or amber lens. Chrome plated.



KD 612 Danger Flag

12" x 12" in color-fast, weather-resistant red. Galvanized rust-proof stuff. Compact red container keeps flags clean.



KD 108 Extension

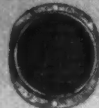
Mirror. Panel or hinge mounting. Adjustable hinge bracket.



Black enamel finish.

KD 333 Stimsonite Triflex Reflector.

Miracle of light reflection. Appears like lighted tail lamp at distances of 300 to 700 feet.

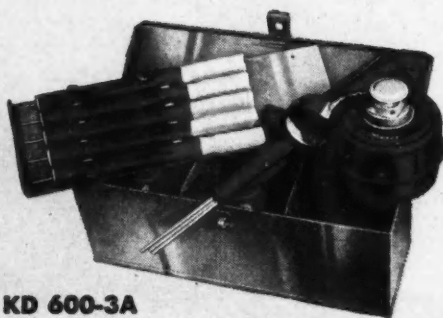


KD 541 Armored Clearance Lite.

New corrosion-proof features, plus all the patented advantages which make it recognized as the best available.



KEROSENE OIL FLARES



KD 600-3A

Furnished with three KD 600 flares with three flags, in heavy gauge steel box. Gangway Box Sets offer greater value. In strong, sturdy, portable box with handle, easily mounted if desired. Hinged cover with positive hasp catch that may be padlocked. Tray to accommodate fuses and flags nests in top of box. Fuses are not furnished with the Gangway Sets.

ALSO AVAILABLE — NOT ILLUSTRATED.

KD 600-3. In metal steel box, consisting of three KD 600 flares only.

KD 601-3. Three flares on a bracket. Immediate shipment.

KD Kerosene Flares meet I. C. C. and State Requirements.

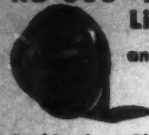
KD 105 Mirror Head.

Universal ball socket mounting. Shock Proof. The silver-plated surface is sealed against deterioration by weather changes.



KD 506 Marker Lite.

Rigid angle mounting bracket. et. K-D Beehive lens. Black enamel finish.



* Adapted from a paper presented at the annual meeting of the SAE, Jan. 10-14.

A-LA-KINGHAM

VANS CHASSIS

FLATS

REEFER

RACKS

GRAIN TRAILERS

STAKE P

DROP FR

LONG DISTANCE MOVING

SINGLE AXLE

TANDEM AXLE

FOUR WHEEL

JUST
WHAT
YOU
ORDERED!



Kingham Kustombilt Trailers are tailored according to your own specifications for any type service... "you get just what you order," engineered and built to do

your specific job at the lowest operating and maintenance costs.

That's because Kingham's vast experience covers every phase of Kustom Trailer building.

Write us for the location of your nearest Kingham distributor and learn first hand how you can continually profit by having your next trailer Kustombilt by Kingham.

A load behind is a trip ahead

Kingham
UNIVERSAL

NATIONAL SALES
NATIONAL SERVICE

KINGHAM TRAILER COMPANY • INCORPORATED • LOUISVILLE, KENTUCKY

New Products

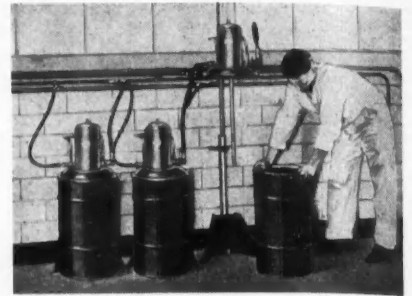
Continued from Page 56

further adequate protection for tires. Steering tie rods have been raised and a heavy steel plate 6 in. wide mounted beneath the axle to protect steering mechanism. A universal joint incorporated in the steering mechanism helps eliminate wheel kickback. Industrial Truck Div., Clark Equipment Co., Battle Creek, Mich.

P180. Lube Drum Lift

Individual manually-operated elevator units, for 100-lb stationary drum pumps, are designed specifically to make drum changing faster and easier. They cut installation costs, and protect pumps and lubricants from contamination by dust and dirt.

The units may be installed individually as desired, or adjacent to each other to form a battery, and may be located remote from the lubrication department. One lift on elevator



handles raises Lubrigun clear of drum. Automatic latch holds unit rigidly at extended height while drum is being changed. No disconnecting of air and lubricant hose is necessary. Lincoln Engineering Co., St. Louis, Mo.

P181. Gasoline Lift Truck

Gasoline-powered industrial trucks, to be known as the "Lift King" gas truck line, will feature a standard Chrysler fluid drive coupling permits progress from slow to fast speeds, and vice versa, without operating clutch or gearshift.

Other features include: clear full vision, 6-cyl 65 bhp Chrysler engine, shockproof steering, automotive-action hydraulic brakes, cleated cushion tires, heavy all steel construction, heavy-duty hypoid gearing, and ready accessibility of all parts. The Yale & Towne Mfg. Co., Philadelphia, Pa.

P182. Air Impact Wrench



This new "CP-770" impact tool runs nuts on or off bolts as large as 1 in. . . . and from five to ten times faster than by hand. Impact can be controlled to the job at hand. Tool does not kick or thrust; its torque is not felt by the operator.

Turning down U-bolts, spring center bolts, control arm bushings and shackle bolts are examples of work done by this tool. Chicago Pneumatic Tool Co., New York, N. Y.

(Turn to page 130, please)

Handy Governor

Vari-Speed

Characteristics and Advantages

- ① Wide range of governed speeds without the necessity of any change in governor assembly.
- ② Controlled light load speeds.
- ③ Sharp governor cut-off—minimum horsepower loss.
- ④ Low speed droop.
- ⑤ Final full load and no load factory calibration on air flow machine assures you accuracy and uniformity in production.
- ⑥ Simple to adjust.
- ⑦ Simple mechanical design—only one moving shaft.
- ⑧ Sturdy corrosion-free construction.
- ⑨ Stainless steel needle bearings that insure instant response.



**NO OTHER
VELOCITY GOVERNOR
CAN GIVE YOU ALL
THESE ADVANTAGES**

**KING-SEELEY
CORPORATION**

ANN ARBOR MICHIGAN

PLANTS IN
ANN ARBOR
GRAND RAPIDS
YPSILANTI

Exide

BATTERIES

LOW COST PER MILE OF OPERATION
plus power, performance, long life



All its service-proved features continue to make Exide the outstanding battery for the needs of today

Heavy, oversize plates • Greater capacity • Self-cleaning, non-spitting vent plugs • Double insulation between plates •

"Bull's-Eye" electrolyte leveling device • Heavy inter-cell connectors • Hard rubber container • Positive cover seals.

"Exide" Reg. Trade-mark U. S. Pat. Off.

1888 . . . DEPENDABLE BATTERIES FOR 61 YEARS . . . 1949

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

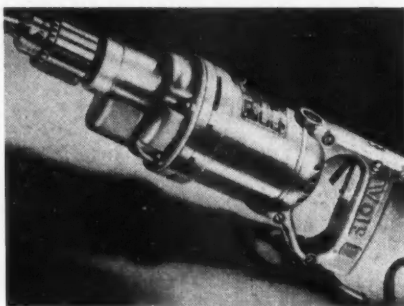
COMMERCIAL CAR JOURNAL, March, 1949

New Products

Continued from Page 128

P183. 3/8-In. Drill

A heavy-duty portable electric drill, built to stand up under continuous operation is ready for the market. Accessories include a bench drill stand and a bench clamp stand. Steel drilling capacity is 3/8 in., in wood 5/8 in. Spindle speed running light is

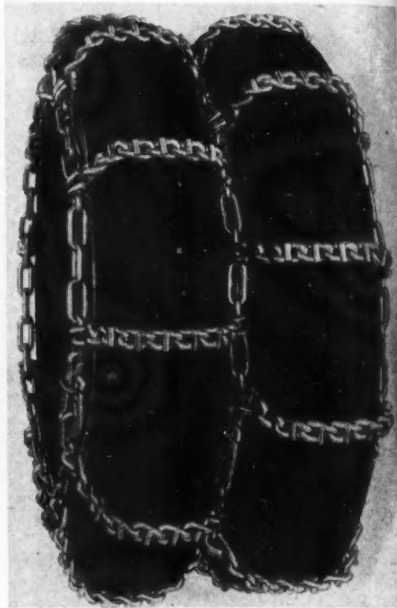


750 rpm; on full load 450 rpm. S. Wolf & Co., Ltd., London, England.

(Distributed by Fred L. Stuart, New York, N. Y.)

P184. Weed Dual Chains

The Weed American dual bar-reinforced triple truck chain are designed so that at least three of the staggered cross chains grip the road at all times. This is said to improve traction as well as provide more mileage with less replacements. The third or middle side chain keeps the chain



close to the tire to provide better balance and wear. American Chain Div., American Chain and Cable Co., Inc., York, Pa.

The Servis Recorder

\$AVES\$

TRUCKS COST MORE....

Therefore see that your trucks work harder—do more work. Make five trucks do the work of six. Let the little **SERVIS RECORDER** help you. How? Its daily chart shows up **ALL DELAYS**—how long and how often. You can easily increase the actual running time of each truck daily.

TRUCKS



TIRES COST MORE....

SPEEDING doubles the wear and tear on tires—a costly waste. Equipping a truck with the **SERVIS RECORDER** helps prevent speeding; the driver then knows he cannot "make up" lost time, hence he has no incentive to "step on it."

TIRES



FUEL COSTS MORE....

Our D-S "Motor Idling" Model helps prevent waste of gasoline—it tells you if your driver *leaves the motor running* when he stops to make a delivery. Let us send you the whole story—write us today.

GAS



THE SERVICE RECORDER CO.
1375 EUCLID AVE., CLEVELAND 15, OHIO



The Servis Recorder

Means Economy of Operation

P185. Backed Brake Blocks

Sheet aluminum backing and new precision grinding processes for finish forming are features of this new line of brake blocks. Soft 18-gage sheet aluminum is bonded to the shoe side of finished blocks, becoming an integral backing liner. Besides increasing overall strength of the block, the liner makes possible increased contact between block and shoe for more efficient heat dissipation, greater holding power and greater resistance to breakage of bolt holes, the manufacturer states.

Precision-finish grinding holds block radius dimensions to within .002 in. and can control width and thickness dimensions to within .005 in. This is said to simplify brake block replacement and minimize tendencies for heavy brakes to chatter or squeal. Braking load is distributed equally over the entire surface of the brake block. Grizzly Mfg. Co., Paulding, Ohio.

END

(Please resume your reading on P. 60)

Setting New Standards of Spark Plug Performance



..HASTINGS *Aero-type*

● Here's the new leader in spark plug performance—Hastings Aero-type.

Here's the answer to car-owners' demands for infinitely better service—for *sure ignition* at all speeds, when idling or pulling the steepest hill. Here's the plug that's given fleets more service-per-dollar wherever it's been introduced—the plug that dealers everywhere have found readily moved, and highly profitable.

Hastings Spark Plugs give this all-round satisfaction because they're built to rigid aircraft

standards—using a super-strength insulator developed for fighter planes and superforts. Hastings Plugs feature a wider gap setting. And each and every plug is X-ray Inspected for uniformity—Performance Rated to give you the right plug for every operating condition.

Start with Hastings Aero-type now—you'll know, at last, how a really fine spark plug can improve an engine's performance.

Spark Plug Division
HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN

\$1.25
AND
WORTH IT!



If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.

Refresher Course for Drivers

Continued from Page 85

bility of developing his own method and material for his part of the course. They do, however, follow the general outline of the course rather closely.

Under the MTA plan, the course is held once a month for three days. Drivers are selected by the manage-

ment to attend and are paid full time for the entire period. Classes are held eight hours a day, with an hour off for lunch and a 10-minute recess at the end of each hour. The course is given in Detroit in a classroom loaned by the city, and drivers from out of town are allowed living expenses.

An important point for the operator is to explain to men selected for the course why they are being sent. When the program first started, drivers understandably resented being chosen, since they considered it punitive action or a reflection on their driving ability. The better operators now explain to them that they are selected because of their ability to learn and bring back to other drivers the latest up-to-date information. Tact and an intelligent and convincing explanation to the driver at this point go a long way toward sending him to the class in the proper frame of mind.

When the first session gets underway, Cross gets the men off to a good start through a clever technique. Invariably, one or more drivers will ask at the outset why they have to go through all this business when they are all good drivers anyway. He then gives them a stiff pre-test on the traffic laws—on which the average grade runs from 40 to 50 per cent. Then comes a bit of good-natured badgering when he tells them the test is to be included in their file which is sent back to their employer. However, when another test is given at the end of the course, the score usually is close to 100 per cent, and everyone goes home happy. He also, in the first session, explains the reason for the class, length of time required, and what is to be presented.

Details of Curriculum

AFTER registration is completed, each participant is asked to fill out the Siebrecht Attitude Scale. This is a comprehensive series of 40 statements related to the driving of motor vehicles. Since there are no correct answers to the statements, they are set up to permit an indication of the extent to which the driver agrees with the statement. It is conceived to give a picture of the driver's attitude toward various factors involved in operating a vehicle, such as traffic laws, personal discretion, safety, and similar problems.

After these preliminaries are out of the way, the course gets down to business with a talk by a representative of top management who lays out for the men what the company executives consider important. He attempts to implant firmly the impression that the company is vitally interested in courtesy and safety to the public. He emphasizes complete knowledge of company rules, the driver's attitude, and the relationship between carrier and the customer. Another point is the importance of the driver's appearance, such as cleanliness of person and uniform, courteous and considerate conduct, and good physical condition.

(TURN TO PAGE 134, PLEASE)

STANDARD EQUIPMENT ON NATIONALLY ADVERTISED MOTOR TRUCKS

Signal-Stat

SAFETY DEVICES FOR TRUCKS, BUSES,
COMMERCIAL AND PASSENGER CARS



BRAKELITE

An instant flash reveals when emergency brake is on. Perfect insurance against wear and burning out brakes and clutch.



SPOTLITE PILOT

No danger of driving with defective stoplites. Shows defect instantly!



DIRECTIONAL SIGNALS

APPROVED BY: States requiring Directional Signals. S. E. M. A. Safety Equipment Manufacturers Association and AAMVA—Association of American Motor Vehicles Administrators certificate No. 1.

THE ONLY DIRECTIONAL SIGNAL WITH PATENTED BURN-OUT-PROOF SWITCH



FUSE-IN-LINES

The perfect way to fuse circuits! Practical no drilling, no soldering, easy to install, cut wire and splice.

REDUCE ACCIDENTS—SAVE ON INSURANCE

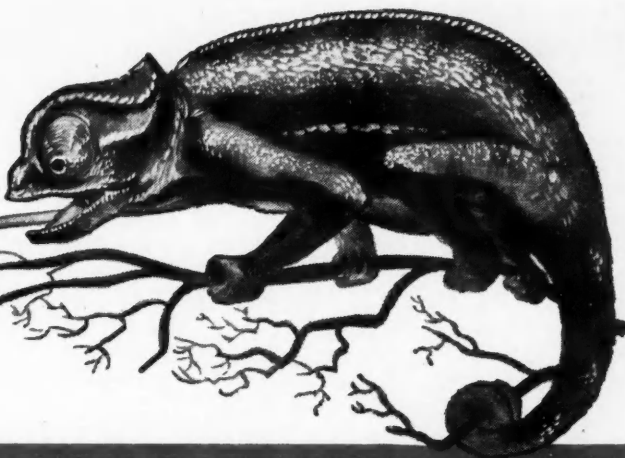
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Your life or your property may depend on the speed of your fire fighting equipment. A few seconds may spell the difference between a tiny flame and an unmanageable blaze. Quick-Aid Fire Extinguishers save you precious seconds because they operate quickly, cleanly, efficiently. Quick-Aid Carbon Dioxide Extinguishers (illustrated here) are available in all sizes from 2½ to 100 lbs. They are Underwriters' Approved and especially recommended for fires in electrical equipment, gasoline, and chemicals. Look in the classified section of your telephone book for the Quick-Aid trade mark or write direct for the name of your nearest dealer.



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Refresher Course

Continued from Page 132

Next comes a two-hour session on handling of freight. This is divided into two sections: general freight—common and contract carrier; and proper procedure in handling Bills of Lading, delivery bills, C.O.D. shipments, making pickups properly, and similar problems. Conductors handling this assignment generally are associated with the State Freight claim division

and are thoroughly familiar with claim work and interested in reducing freight claims. ATA has an excellent film for use with this part of the course. It is called "Twenty Million Dollar Problem."

Following a one-hour lunch period, two hours are devoted to accidents and their causes. The subject is taken up under four principal sections—(A) Analysis of traffic and compensation accidents; (B) Discussion of various types of accidents by the class; (C) Insurance costs as related to accidents; and (D) Proper procedure for reporting

accidents and notifying authorities. This session usually is handled by an insurance company safety engineer. Here again an excellent movie film is available. It is put out by the National Safety Council and is titled "If It Happens."

The remaining two hours of the first day is given over to conservation of equipment. This is handled by a competent maintenance engineer or someone from the automotive engineering field. Discussion centers on motor, brakes, clutch, axles, tires, lights and electrical equipment, cooling system, lubrication, motor oils, and gasoline. The general theme here is to acquaint the driver thoroughly with all mechanical elements of his vehicle and to show him the relationship of his driving conduct to the satisfactory operation and extended life of the truck. He is shown, for example, why excessive engine idling wastes fuel and is hard on the motor, why jerky starts and not using creeper gear when required results in broken axles, and how improper use of brakes causes skidding, tire wear, and undue strain on chassis members.

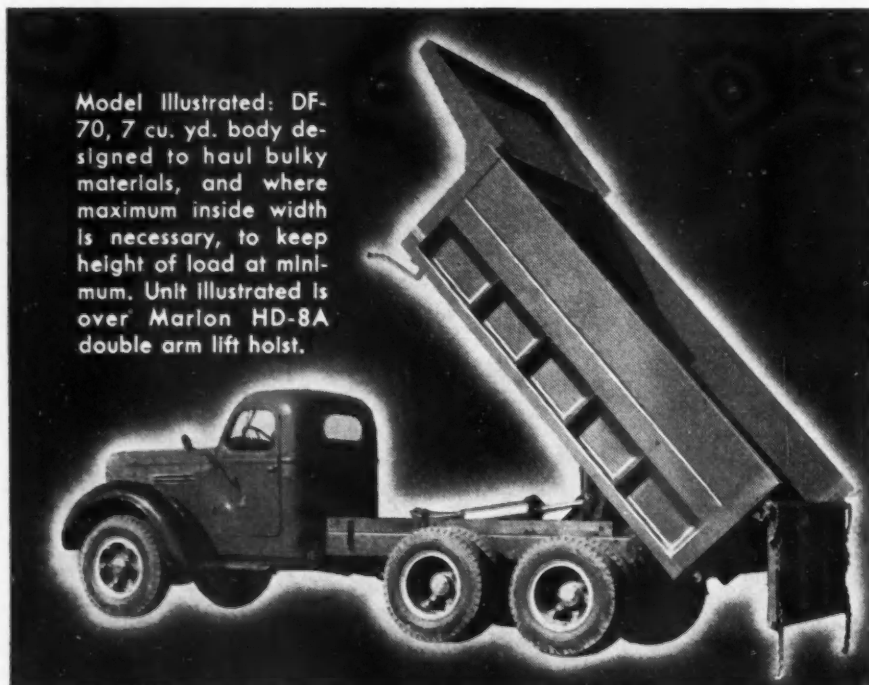
The first hour and a half of the second day is a course in first aid. Local chapters of the American Red Cross are cooperative in providing instructors and movies for the session. This is strictly a how-to-do-it proposition, covering what to do and not to do at the scene of an accident, how to handle the different types of wounds and injuries, treatment for shock, transportation of persons with fractures and head injuries, and artificial respiration.

The balance of the second day is devoted to psycho-physical tests and driving tests. The class is divided into two groups, with one taking the driving test while the other is in the classroom taking the psycho-physical examination. MTA has found that the time element required for the tests varies, but that on the average it is about twenty minutes per person. Two instructors can easily handle a class of from 20 to 25 in a six-hour period.

Equipment required for the psycho-physical tests is either purchased outright or in some cases borrowed from the local AAA. The tests cover visual acuity, field of vision, glare (night vision), depth of perception, color vision, eye dominance, steadiness, and reaction behind the wheel.

Driving tests are held on an off-the-street course and cover working knowledge of various types of equipment, double clutching, braking, parking, and smoothness of starting and stopping. The Rodeo course which ATA uses each year presents most of the problems which the driver will encounter.

(TURN TO PAGE 136, PLEASE)



Model Illustrated: DF-70, 7 cu. yd. body designed to haul bulky materials, and where maximum inside width is necessary, to keep height of load at minimum. Unit illustrated is over Marlon HD-8A double arm lift hoist.

Profitable Hauling Starts with "On The Job" Design

It's easier to meet the profit problems of your hauling job with Marion. Because Marion units are developed by engineers who go out "on the job" under actual working conditions . . . they are designed for bigger payloads with fewer breakdowns under the roughest treatment. Ask your Marion Distributor about the Marion unit designed "on the job" to meet your special requirements, or write direct.

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DUMP BODIES and
HYDRAULIC HOISTS

MARION METAL PRODUCTS CO., MARION, OHIO

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Just mail a post card or letter for the complete Marion catalog, or ask your Marion Distributor.



Dead Engines

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THE AC FUEL PUMP SYSTEM HELPS KEEP YOU OUT OF TROUBLE

Whether you haul goods or people, you lose money when engines go dead.

That's why practically all operators of gas-powered trucks and buses rely on AC Fuel Pumps for an unfailing supply of gas to the carburetor. No other fuel pump has such an amazing record of reliability.

Naturally, it's true economy to replace and to inspect the pumps at regular intervals for pressure and flow.

And for complete 3-way fuel protection, use the other two units of the AC Fuel Pump System . . . the AC Flexible Gasoline Line and the AC Gasoline Strainer.



1. Leaky fuel lines are not only dangerous, but cause faulty operation of the Fuel Pump. Install a new AC Flexible Gasoline Line when you replace your Fuel Pump. 2. AC Fuel Pump, Heart of the Fuel System. 3. AC Gasoline Strainer keeps dirt and water out of carburetor, promotes easy starting and protects delicate carburetor parts. Your fuel system needs one.

AC
FUEL PUMP
SYSTEM

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

COMMERCIAL CAR JOURNAL, March, 1949

Refresher Course

Continued from Page 134

The third and final day of the course opens with driving rules and regulations of the road. Included are explanations of the I.C.C., state and local safety and traffic regulations, check stations, routes, and so forth. The District I.C.C. inspector is asked to explain the functions of his agency. Local city and state highway patrol officers discuss the benefits of safe truck operation. A

capable operations man handles the question of check stations and routes.

The final three hours of the course are devoted to a general review of the program. Two hours are given to open discussion, question and answers, and a written examination on all subjects covered. A one-hour session covering explanation of the different classroom material used during the course winds up the program.

A complete file on each man taking the course is maintained and is forwarded to his employer at the conclusion of the three-day program. It in-

cludes tests and ratings and provides the employer with a full report on how his driver measures up and also tells him a great deal about the kind of individual he is.

Participants Like It

THE real test of such a program as the refresher course is what the operators—the men who pay the cost—think about it. There is no doubt that those who have participated are thoroughly sold. The very fact that it has been running for three years and has turned out nearly 800 "graduates" is pretty convincing evidence. Some companies send a man a month, other more. Some operators send drivers during slack seasons. But all agree that the course is very much worthwhile.

There does not appear to be any set pattern for selecting drivers to take the course. Some companies send their best men, with the idea that they will come back and teach others. A few pick out drivers with only fair accident records in order to improve their driving ability. And some pick the worst drivers in the belief that they are most in need of such training.

Emery Dykstra, vice president and secretary of Henry Vroom & Son, Inc., Detroit, says the most important advantage he has noted is the marked improvement in the attitude of the men who have taken the course. They show greater interest in their work and their attitude in relation to the company and the public is excellent. Moreover, they come back as the best salesmen for the course, and say that all the drivers should take it. As a result, other drivers ask to be sent. One even was willing to give up a hunting trip if necessary when his turn came.

William Merritt, supervisor of safety and personnel for Trucking, Inc., Detroit, agrees that the improvement in attitude of the men is the big advantage of the course. He points out that any marked improvement in safety records of the men is pretty difficult to demonstrate, since they are good drivers before they start the course, and there is not enough room for improvement in that respect to make any great showing. He always makes a point of impressing on the men that the course is not designed to eliminate any driver, but to help him discover any shortcomings and compensate for them. He also makes the point that drivers who have completed the course spread the gospel among the rest of the men that all drivers should go to the classes. Trucking, Inc., like Vroom, plans to put all its drivers through the course.

END

(Please resume your reading on P. 86)



**VALVE GRINDS?
WE CAN ALMOST
FORGET 'EM
WITH THESE
PAR PLUSES!**

Take advantage of the Par Plus Plan for exchanging your valves like fleet owners all over the country are doing. Contact our nearest distributor in:

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Boston
Philadelphia
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or write Parts Processing Corp., 2100 Howard St., Detroit 16.



Stellite-faced for the tough hauls, Par Plus processed valves are better than par because they give you all these pluses:

- Reduce out-of-service time for valve replacement and regrinding while giving 5 to 10 times longer service than best alloy steel valves.
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- Save service expense, prolong engine life, keep up power.
- Increase fuel performance.
- Cost so little extra!

PAR PLUS VALVES

PARTS PROCESSING CORP.
DETROIT AND BATTLE CREEK, MICHIGAN

Brake Tests

Continued from Page 82

in Fig. 3. As a whole, there was little difference in the stopping distance ratios obtained by the various techniques.

As far as the relation of this group of tests to the use of front wheel brakes is concerned, except for one instance (Driver No. 3), the ratios are greater than 1.00, which means a shorter stop was obtained with the front wheel brakes.

Glare Ice Curve

THE glare ice curve tests were conducted in an area with a 200-ft radius, using both test and line drivers. The most significant fact developed, thus far, is that the loaded 3-axle truck, the two 3-axle combination units, and the 4-axle combination unit have a stopping distance ratio (off to on) that is less than 1.00. In this regard, these vehicles performed better on the curve without front wheel brakes.

There is little doubt that steering control on the curve was lost when the front wheel brakes were connected and the front wheels were locked. This is evidenced by the results shown in Fig. 4.

One method used to evaluate the effect of front wheel brakes on steering control was to attempt to increase the maximum speed that a vehicle could sustain through the curve, while remaining in the 12-ft lane, by power braking with and without front wheel brakes. In no case was the maximum sustained speed, obtained without braking, bettered by power braking when the front wheel brakes were on.

The maximum speed obtained without braking, was increased for test vehicles No. 1, 2, 5-6, and 4-7 by power braking without the front wheel brakes. This appears to bear out the previous findings that the 3-axle straight trucks and the combination units are easier to control and stop on a curve with the front wheel brakes inoperative.

The curve tests were repeated using professional line drivers on test vehicles No. 5-6 and 4-7, using various methods of braking with and without front wheel brakes. As shown in Fig. 5, it made little difference in the

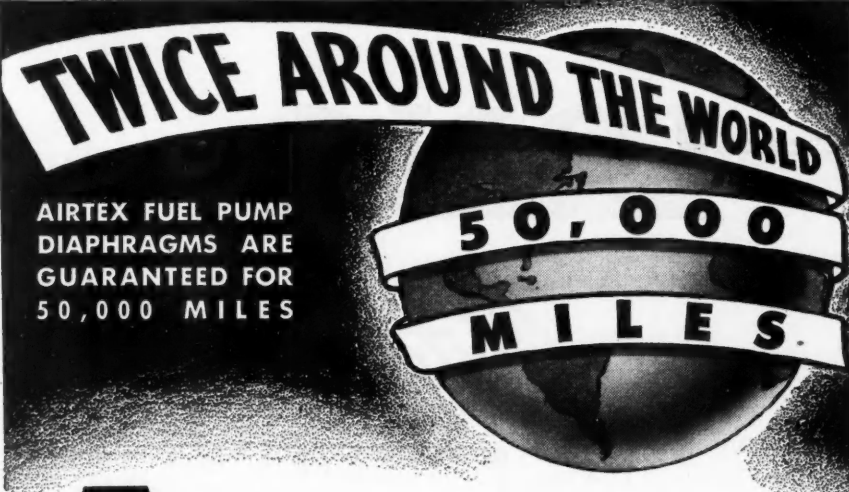
case of vehicles No. 5-6 whether the front wheel brakes were on or off. This is not the case for test vehicle No. 4-7 because all drivers demonstrated that shorter stops could be made without the front wheel brakes.

Location of Fifth Wheel

TEST vehicle No. 5-6 (2-axle truck-tractor and 1-axle semi-trailer equipped with air brakes) was tested on the 200-ft radius glare ice curve with the king pin of the fifth wheel

located directly over the rear truck-tractor axle and, also, 15½ in. ahead of the rear truck-tractor axle. Tests were run both with and without chains but only the results without chains are considered since, after a few runs made with chains, the course became so rutted and chopped that it became difficult to obtain accurate speed or distance readings.

The tests made without chains utilized an adjustable air brake treadle stop and air application pressure (TURN TO PAGE 142, PLEASE)



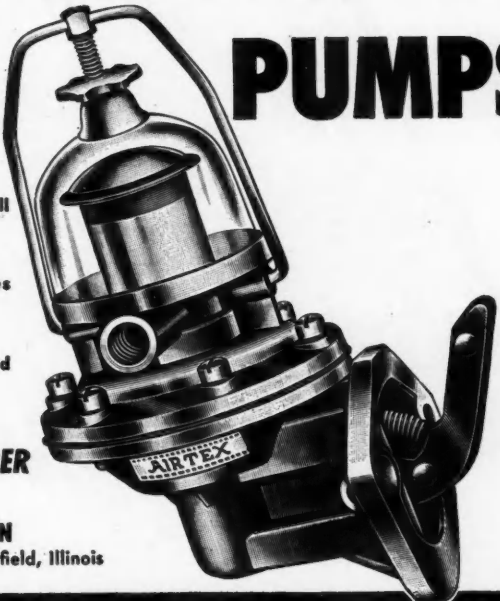
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instant diaphragm flexings in all weather
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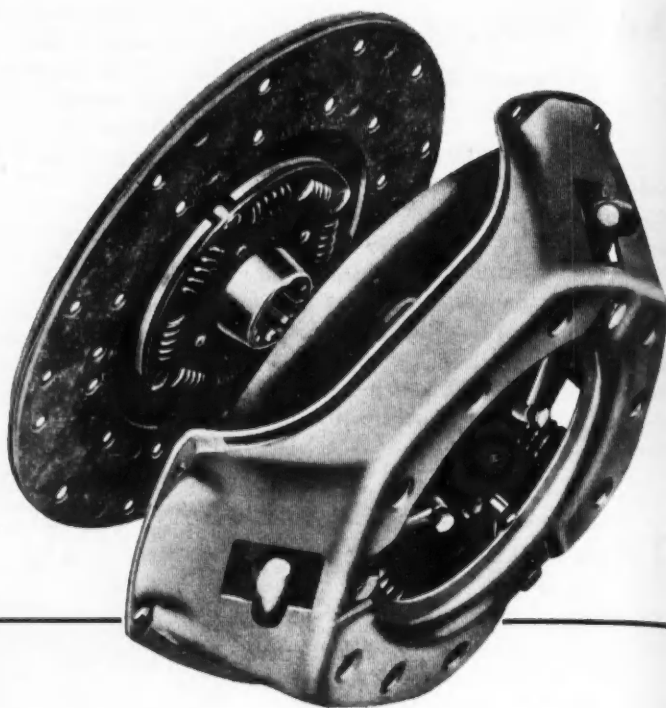
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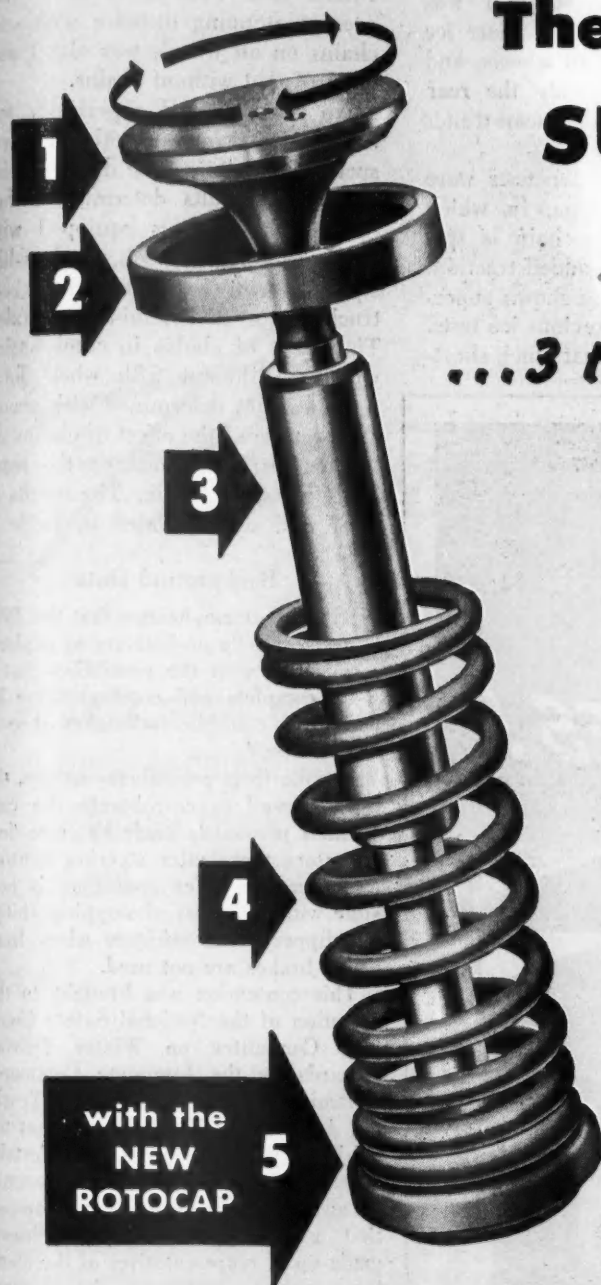
LONG MANUFACTURING DIVISION
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CLUTCHES • RADIATORS • OIL COOLERS

The New Thompson SUPER-VALVE ASSEMBLY

...3 to 5 times longer service



with the
NEW
RTOCAP

THE HEART of this assembly is the new post-war Thompson RTOCAP. This improved, patented device provides *positive* rotation of the valve *at all engine speeds* for the first time. The wiping action keeps the valve and block seat clean. Power is efficiently sealed in. Valve sticking, warping and burning are eliminated, and the valves operate much longer without regrinding.

In this heavy-duty super-valve assembly are:

1. Thompson *Aerotype* (AS) Valves, of aircraft valve steel (sodium-cooled valves for certain Autocar engines).
2. Thompson *Duracrome* Valve Seats, of an extremely hard, patented alloy that prevents block pounding and increases valve seat life and sealing efficiency—standard in millions of automotive engines.
3. Thompson *Chrome-Nickel* Iron Alloy Valve Guides, with holes accurately sized and burnished at the factory—no reaming necessary.
4. Thompson Valve Springs of finest spring steel, made especially for the RTOCAP, in matched sets for uniform, lasting tension.
5. The Thompson RTOCAP, which replaces the regular valve spring retainer cap. Now being used by important engine builders, and in test by many others.

Many tests of this super-assembly in our plants and in long, actual service prove that it increases average valve life 3 to 5 times.

Thompson Super-Valve Assemblies with the RTOCAP are now available for many models of:

Autocar	GMC
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RTOCAP Assemblies for additional makes and models will be cataloged and carried by TP distributors as rapidly as we can get new stocks to them.

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Precision Parts for Automotive and Aircraft Service

Brake Tests

Continued from Page 139

gage. The results shown in Table 1 indicate that a slightly shorter stop, both with and without front wheel brakes, and a slightly higher critical speed were obtained when the fifth wheel was 15½ in. ahead of the centerline of the rear truck-tractor axle, than when it was directly over the axle.

Effect of Chains

TEST vehicle No. 5-6 also was tested on the 200-ft radius glare ice curve with chains on all wheels, and then with chains on only the rear truck-tractor axle and the semi-trailer axle.

The chains used in the tests were of the "premium" type, in which each link of the cross-chain is specially constructed for added traction. This type of chain has shown superior performance in previous ice tests.

All tests indicated that much short-

er stops could be made with premium chains than without chains. The average stopping distance with such chains on all wheels was about one-third of that without chains.

No such marked superiority was evident in regard to critical curve speed. There was little difference between the results determined when the test vehicle was equipped with chains on all wheels, and when equipped with chains on only the rear truck-tractor and semi-trailer axles. The effect of chains in combination with the different fifth wheel locations was not determined with accuracy because of the effect of chains on the ice surface in making the readings difficult to obtain. The results of these tests are tabulated in Table 1.

Background Data

THE report emphasizes that the 1948 tests were "a preliminary or exploratory study, with the possibility that a more complete and comprehensive investigation could be undertaken at some future time."

Despite their preliminary nature, the tests seemed to corroborate the contentions previously made by some fleet operators that better steering control, and therefore safer operation, is possible with little loss of stopping ability on slippery road surfaces when front wheel brakes are not used.

This contention was brought to the attention of the National Safety Council's Committee on Winter Driving Hazards by the Interstate Commerce Commission and the American Trucking Associations, Inc. Feeling that the subject was too involved to undertake without considerable help, the Committee on Winter Driving Hazards proposed that a "Ground Rules Committee," made up of representatives of the many interested organizations, be formed. This was done, and the expanded committee became known as the Joint Committee on 1948 Winter Traction Tests.

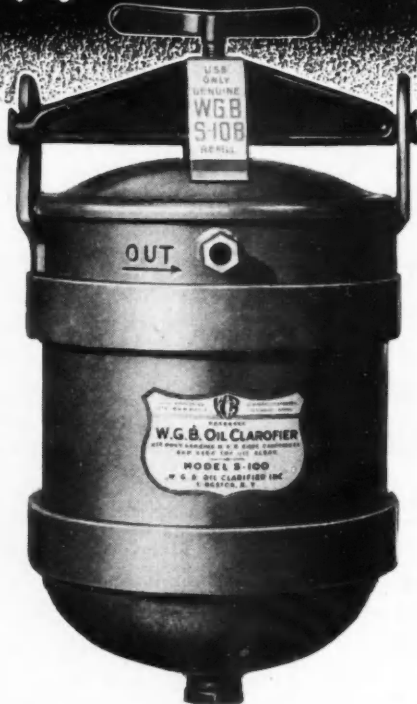
The ideal way would have been to conduct tests under actual road conditions on icy grades and curves. However, recognizing the many practical difficulties which seemed to rule against this, the Joint Committee decided that a major portion of the 1948 tests should be conducted on lake ice, and that further investigation should be made of the possibility of preparing a suitable surface on a flooded field or on a public highway.

The Four Wheel Drive Auto Co., of Clintonville, Wis., invited the Committee to conduct its tests at nearby Pine Lake, and offered the services and facilities. (TURN TO PAGE 144, PLEASE)

GET ALL THE LUBRICATION GOOD OIL PROVIDES!

**WGB Clarification Assures
Lower Lubrication Costs—
Longer Engine Life**

AND HERE'S WHY: Intensive laboratory tests prove conclusively that correctly processed, properly formed and adequately supported, fine cotton is the most efficient filtering medium for all kinds of oil. Further, WGB Clarification thoroughly cleans the oil—without removing essential addi-



tives or other lubricating qualities. The WGB Cartridge outlasts other types by a ratio of 2 to 3 . . . cuts engine repairs to a new unheard-of low—and can be changed without tools. Get to know the advantages of WGB Clarification.

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Swift, silent, enduring service . . .
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45 YEARS OF
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Brake Tests

Continued from page 142

ities of its experimental department, as well as the necessary crew and equipment for maintenance operations. The Committee accepted, and most of the testing was done on Pine Lake, with a number of dry concrete tests made on a nearby state highway.

The report points out that the shaved surface of the lake ice did not duplicate

the variable surface conditions of an actual roadway. All types of vehicles and combinations, under various load conditions, could not be tested because the ice would hold only 42,000 lb.

The following trucks and combinations were included in the study:

No. 1—3-axle, 6x4 straight truck; 12,720 lb gvw (empty).

No. 2—3-axle, 6x4 straight truck; 29,920 lb gvw.

No. 3—2-axle, 4x2 straight truck; 24,160 lb gvw.

No. 4—2-axle, 4x2 straight truck; 13,550 lb gvw.

No. 5-6—2-axle, 4x2 truck-tractor, in combination with a 28-ft, single axle semi-trailer; 42,760 lb gtw.

No. 4-7—2-axle, 4x2 straight truck in combination with a 16-ft, 2-axle full trailer; 33,570 lb gtw.

No. 3-6-8—2-axle, 4x2 straight truck in combination with a 28-ft, 2-axle full trailer; 60,310 lb gtw tested only on dry level pavement.

No. 9—2-axle, 4x4 straight truck; 15,635 lb gvw.

No. 10—2-axle, 4x2 truck-tractor in combination with a 26-ft, single axle semi-trailer; 42,000 lb gtw (with electric brakes).

Conclusions and Recommendations

THE researchers felt that the evidence of the value of front wheel brakes was conclusive in the case of the 2-axle straight trucks, and that this type should be eliminated from future tests.

The results also indicated that some of the test vehicle combinations could operate without front wheel brakes with little loss of stopping ability on straightaways, and with a definite improvement in performance on slippery curves. Front wheel brakes on the 3-axle straight truck, the 2-axle truck-tractor and 1-axle semi-trailer, and possibly other types, appear to be an asset on dry or slippery straightaways, and a slight liability on flat surface curves.

The committee concluded that the performance of front wheel brakes on the combination vehicles was questionable enough to justify future tests to determine whether the front wheel brakes can be completely eliminated on certain types of vehicles; whether they should be retained on other types with provision of shut-off; and whether they should be retained with provision for a valve to partially reduce or completely shut off front wheel brake action.

The report urges that the program be continued and that the longer and heavier units typical of western region transportation be included.

Organizations Cooperating

IN ADDITION to cooperating truck operators and automotive manufacturers, participants in the 1948 Winter Traction Tests were: American Trucking Associations, American Automobile Assn., Automobile Manufacturers Assn., Highway Research Board, Interstate Commerce Commission, National Bureau of Standards, National Council of Private Motor Truck Owners, National Safety Council, Public Roads Administration, Society of Automotive Engineers, and Truck-Trailer Manufacturers Assn.

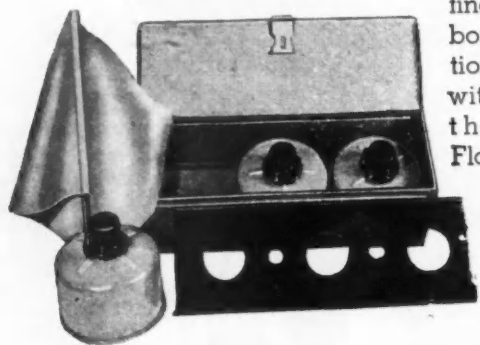
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(Please resume your reading on P. 83)

BOLSER Safety Equipment

BOLSER CHECK-IN-BOX FLARE OIL BURNING FLARES MEAN ROAD SAFETY

Fleet owners who use the check-in and check-out system for safety equipment will



find this Bolser metal box an ideal solution. Sturdy steel box with handle contains three Fair Way Flares equipped with Genuine Bolser locking device to prevent leaking. Trays for flags and fuses available as accessories.

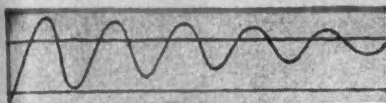
The open flame of a Bolser Flare attracts attention—protects drivers and equipment from traffic. The safest type of warning equipment is an oil-burning BOLSER FLARE.

Hi-Way Warning FLAGS . . . Ful-Vue Truck MIRRORS . . .
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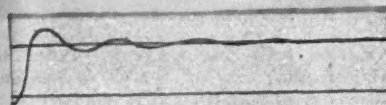
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STANDARD TRUCK CUSHIONS — Poor take-up of shock followed by rough rebounds. Drivers take up to 50,000 shocks like this a day.



BOSTROM HYDRAULIC SEAT—Soaks up the initial shock and levels out—like a passenger car ride.



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tell you better than words why . . . Safety slips! Schedules lag!
Equipment and cargoes take abuse!

Yes . . . Bostrom hydraulic seats more than pay for themselves by reducing driver fatigue. You get additional savings by cutting seat repair bills. Ask your dealer for a demonstration. For free folder, "12 Eye Openers Concerning Truck Seats" write:

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Bostrom Hydraulic Seats now standard or optional equipment on the following trucks: GMC, Diamond T, Federal, Hendrickson, Peterbilt, Walter, Ward La France, FWD, Dart, Oshkosh, and Coleman. Specify Bostrom Model 47 Seats on your new trucks.

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Refrigeration Unit for Divco, Chevrolet and Other C-O-E's

V A NEW REFRIGERATION unit for use on Divco, Chevrolet and similar light c-o-e trucks is announced by Kold-Trux, Inc., St. Louis. The

unit is located under the right front platform and derives its power while on the road from a shaft, fan-coupled to a sheave on front of the engine

crankshaft. The rear end of the shaft is directly connected to a fan hub assembly containing an overrunning clutch. Maximum compressor speed (up to 1800 rpm) is controlled by governing the truck engine.

For over-night pull-down an elec-

BURD PISTON RINGS

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FROM FURNACE
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MODERN METHODS AND MACHINES ASSURE UNIFORM QUALITY

Years of sound production experience and batteries of modern precision machines (such as that illustrated) are necessary in order to make piston rings of uniformly high quality. Burd has both . . . 35 years of manufacturing "know-how", plus accurate, high-speed machinery to turn out consistently *finer* piston rings — in quantity. No wonder Burd Piston Rings are installed as original

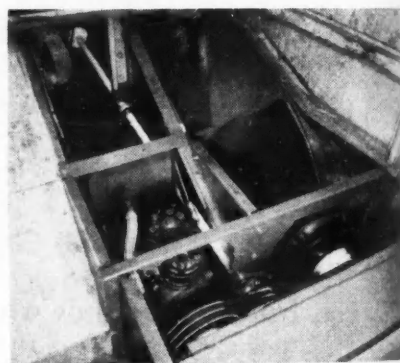
equipment in many engines where ordinary piston rings would fail. From electric furnace to "Graf-Flox" finish, Burd quality is kept uniformly high through constant research, careful inspection, improved methods and better machines. Remember, Burd superiority means bigger over-the-counter demand and more profits for you. Next time, ask your Jobber for Burd "Graf-Flox" Piston Rings. Install them with the confidence that you are helping your customer to extra thousands of miles of trouble-free driving.



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Entire unit fits securely under the right platform of typical c-o-e truck



Looking forward, compressor, shaft from engine to fan hub and motor are visible. Fan is in foreground

tric motor is provided with plug-in attachment located under the hood where it is well protected. Uni-directional clutches permit the motor to override the shaft and the truck engine to override the motor providing a double safety factor.

Built in various capacities, units are available for the 35 to 50 deg. temperature range for milk and meat as well as —10 to —15 deg. range for frozen foods and ice cream.

Firestone R-5 Degree Full Advanced Rims

Reduce Tire Costs

KNAUS TRUCK LINES STOP BEAD FAILURES; GET MORE RETREADS

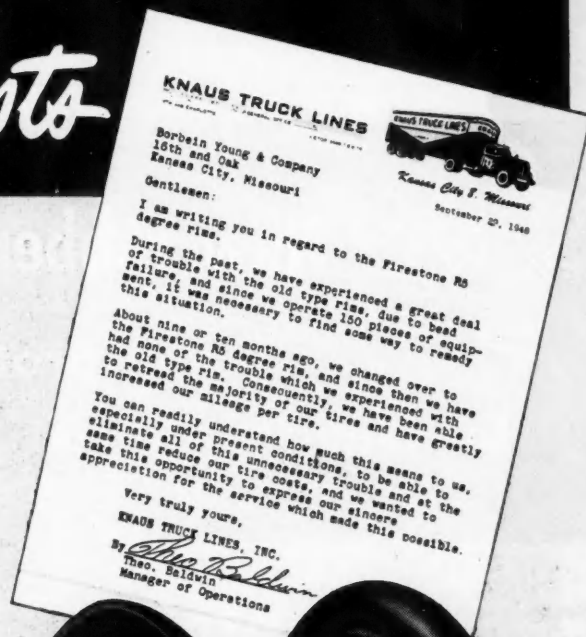
"MORE retreads and greatly increased mileage per tire" — that's the experience of Knaus of Kansas City after changing over to Firestone R-5 Degree Rims. And with 150 pieces of equipment on the road, that means a big savings in operating costs.

These new Firestone R-5 Degree Advanced Rims incorporate *every* improvement specified by tire engineers to provide the full tire support needed for long mileage under today's fast, heavy hauling. Actual records of large fleet operators show that Firestone Full Advanced Rims pay big dividends in lower operating costs for every mile your trucks are on the road. Why pass up these savings? Your nearest Tire Dealer or Rim Distributor* will be glad to show you how Firestone Advanced Rims will save you money. Phone him today.

*All Firestone Rim Distributors are members of the National Wheel and Rim Association.

*Listen to the
Voice of Firestone
every Monday evening
over NBC*

Copyright, 1949,
The Firestone Tire & Rubber Co.



5 MAJOR IMPROVEMENTS INCREASE TIRE MILEAGE

Cooperative Patrol

Continued from Page 94

Screening is a good word in this case. On some days, as few as 20 or 25 reports may be received; on others, particularly during the heavy moving season, the receipts may run higher than a hundred. Trained personnel examine the reports. Some may be discarded because they are

incomplete or lack sufficient identification of the truck. Others may overlap—that is, for example, a truck headed from New York to Richmond may be reported on two or three times during the same day. In all such cases, only a single, consolidated report is forwarded.

No Resentment

MOST of the drivers feel no resentment toward the highway patrol. Many of them take the reports to heart and bend their energies toward making sure that any and all reports concerning themselves are good.

This psychological influence is perhaps one of the most beneficial effects of the patrol program. Because of conditions and problems peculiar to the household goods carriers, it is sometimes difficult to take punitive action. Sometimes the operators hesitate to take drastic action in respect to an old and trusted driver with a good record. It is even more difficult to act when the offender is an owner-driver.

But the good effect has been evident from the start. Bad parking practices have been reduced substantially and are no longer in first place in frequency. Although no attempt has been made to tabulate and list frequency rates of individual practices in the thousands of reports, it is staff opinion that the offense now most frequently reported is carrying of unauthorized passengers—frowned on alike by the ICC, the carriers, and insurance firms.

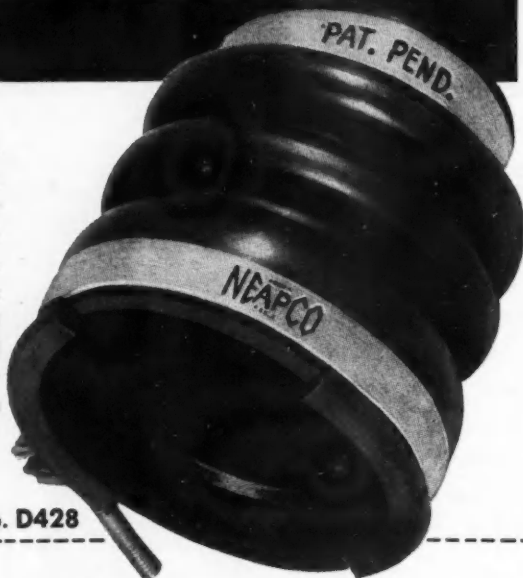
In probable second place is speeding. Sometimes, these are cases of drivers who have a tendency toward speed. But for the most part it is found that drivers have succumbed to temptation to "let 'er drift" on downgrades or are getting a running start on approaching a grade.

The patrolmen cover assigned territory. They have no authority to discipline or even to stop and question the driver; they are provided only with a letter of identification issued by the HGCC. They are instructed, however, to take concrete action (through police or other authorities) in having a driver removed from his truck in cases of obvious drunken or reckless driving.

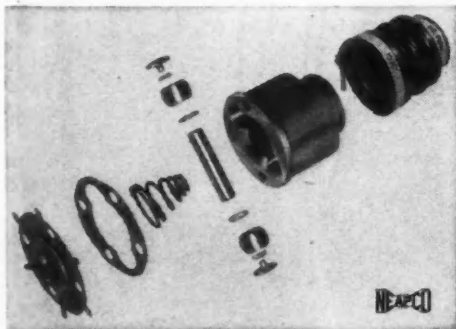
(TURN TO PAGE 150, PLEASE)



Neapco's new tight fitting rubber boot keeps out dust, grit, and grime—furnishes better protection and consequent longer wear for Neapco-Detroit Joints. Flexible synthetic rubber, impervious to oil and grease. Metal clamps hold boot securely in place. Quickly installed. At Neapco jobbers everywhere.



Order Part No. D428

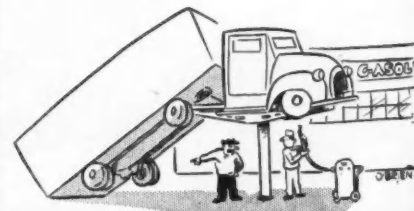


Neapco D4252R, Detroit Kit, complete with body and rubber boot. Services all Plymouth and Dodge 1938-48 (except 7 passenger from 1940-46); DeSoto 50X 1933 and SD 1937-40; Chrysler Royal 1937-39. If Kit is desired with leather boot, order No. D4252. For rubber boot only, order No. D428.

AMERICA'S MOST COMPLETE INDEPENDENT LINE OF UNIVERSAL JOINTS & PARTS

NEAPCO PRODUCTS, INC., Pottstown, Pa.

NEAPCO



"Have you ever thought of uncoupling the trailer first?"



Above: The Lee Distributing Company's fleet of 12 trucks.

Left: Mr. Edward Lee, Jr., manager of the Lee Distributing Company, Duluth, Minn.



Stanolube HD Motor Oil

Gain these maintenance savings in your fleet operations

THE WHOLESALE FOOD business keeps the Lee Distributing Company's fleet of 12 trucks at a fast, gruelling pace. The units are continually starting and stopping at stores in and around Duluth, and, in addition, make long hauls into Minnesota, Wisconsin and upper Michigan.

Under these varying conditions of service, engines could well be expected to "sludge up" and require extra upkeep. Officials of this fleet, however, have found a way to keep maintenance at a minimum.

Manager Edward Lee, Jr., switched his trucks, in 1942, to Stanolube HD Motor Oil. In six years of hard service, there have been no bearing failures. Engines have remained clean and free of sludge. Mr. Lee reports definitely lower maintenance costs with the use of Stanolube HD.

nance costs with the use of Stanolube HD.

Evidence like this strongly indicates the economy you can gain by shifting to this truly heavy-duty motor oil. Stanolube HD has the necessary qualities to prevent trouble on the most difficult jobs. These qualities are obtained by blending effective oxidation-resistant and detergent additives with the highest quality solvent-extracted base stocks.

Make your next change of oil a change to Stanolube HD; get extra protection for engines, extra mileage between overhauls. If you are located in the Midwest, write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois, to secure the services of the Standard Oil Automotive Engineer nearest you.

STANDARD OIL COMPANY (INDIANA)



Cooperative Patrol

Continued from Page 148

While it is not necessary for performing their job, the patrolmen often talk with the drivers; and while they are not required to do so the drivers usually feel no hesitation toward answering questions and discussing their road problems.

The patrolmen cover their "beats" regularly, noting the truck traffic,

and fill out reports for trucks observed. The report forms vary with the organization contracting for the patrols. However, all forms provide for checks on speed, weather and road conditions, driving manner, attitude toward the public, overloading, equipment condition, time, etc.

Future Expansion

THE HGCC committee which set the patrol is making ambitious plans for future expansion when the

time is ripe. For instance, it would like to expand the patrol to include certain mid-western areas such as from Chicago to the Delta and Texas.

Also, in connection with the work, it would like to arrange for inspection facilities to be established at regular terminals, way-stations and parking stops. At such places, trucks could be inspected or checked as to lights, brakes, etc., and minor corrections made while the driver is taking his rest or making a stop-over.

Also, the conference would like to compile and put out a kind of "blue book" which would list such things as terminals, parking lots, garage facilities, etc., (by route, city and address). While regular drivers over specific highways know most of these, such a handbook would be invaluable to others.

To date, one of the biggest handicaps has been the problem of financing the patrol. Originally, voluntary contributions were sought but, as in many cases, this proved inadequate. After a six-month trial, this method was discarded in favor of charging a set rate of \$2 for each report.

Through last October and including the voluntary contribution period, the service was in the red to the tune of \$1900 or about 14¢ per report. At that time, close to 14,000 reports had been received and forwarded to more than 1000 individual carriers.

Slowness of individual carriers to recognize the value of the patrol service and to subscribe to the service has obviously retarded expansion. Also, not all the present subscribers have kept their accounts paid up. Until both conditions are remedied, it will be difficult for the conference to extend patrols to new areas or to put into effect the ambitious plans it has in the making.

END

(Please resume your reading on P. 98)

Good Samaritan Car



Simpson Trucking Co. of Atlanta has joined the growing list of firms who are operating highway patrol cars. Particular emphasis is being placed on its good will value—offering free service to all in need of help



During the winter months when you are likely to encounter snow, sleet and ice on the pavement almost momentarily, there is a great feeling of safety when you can quickly engage a second driving axle and double your traction. It becomes even more important when your center of gravity is relatively high.

That is the advantage which many "ready mix" operators have found in equipping medium duty, production model trucks with FABCO DUAL DRIVES. When rolling down a safe, dry highway, only one driving axle is engaged—but if the road gets slippery or soft, or more traction is necessary to get the load to formside—that's when the second driving axle is as handy as a pocket in a shirt. That's when you appreciate the FABCO DUAL DRIVE.

29 Years in this Business

Fabco

F. A. B. MANUFACTURING CO.

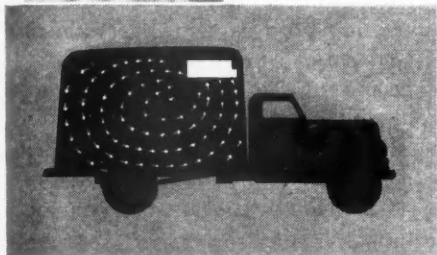
1249 SIXTY-SEVENTH STREET · OAKLAND 8, CALIFORNIA

Dual Drives · 6 and 10 Wheel Units · Logging and Highway Trailers · Frame Extensions

FOSTER-BUILT Dry Ice Truck Bunkers

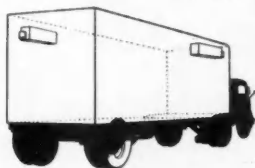


- Low Initial Cost**
- Low Installation Cost**
- Low Maintenance Cost**
- High Refrigerating Efficiency**



Tests on route trucks have shown that Foster-Built Dry-Ice Truck Bunkers maintain desired temperatures more than 18 hours with as many as 30 to 40 door openings.

Transport trucks with Foster-Built Dry-Ice Truck Bunkers have gone as long as 72 hours under moderate weather conditions without re-icing. Bunkers are available in 2-block and 4-block sizes.



Typical bunker installation
in transport truck

The Foster-Built Dry-Ice Truck Bunker is the new, low-cost way to effective truck refrigeration. This unit puts to most efficient use all the temperature-reducing qualities of Dry Ice. The bunker is constructed so that the Dry Ice rests directly over a 2-inch bottom air duct. The Dry Ice chills the metal top plate of the air duct, and a low-amperage sirocco-type fan forces the air along the length of the chilled plate, effectively lowering the temperature of the air. The chilled air is then circulated throughout the truck.

The cost of the Foster-Built Dry-Ice Truck Bunker is but a fraction of the cost of most mechanical and other types of truck refrigeration units, and the placement of four bolts is all the installation required. The units are light in weight and permit increased payloads. Virtually no maintenance is required.

IDEAL FOR FLEET AND INDIVIDUAL TRUCK OPERATORS

The Foster-Built Dry-Ice Truck Bunker has proved to be an effective, low-cost means of refrigeration for both fleet and individual operators. Units are easily removed when refrigeration is not required and in fleet operation may be moved from truck to truck.

For complete information on this new low cost refrigeration method, send in coupon today or call MONroe 6-6880 in Chicago.

DON'T TAKE CHANCES



A Foster-Built Dry-Ice Truck Bunker is foolproof and eliminates the danger of loss through mechanical breakdown. For better refrigeration at lower cost, investigate Foster-Built Dry-Ice Truck Bunkers now.

GET THE FACTS...MAIL THIS COUPON TODAY!

Foster-Built Bunkers, Inc.
757 W. Polk Street, Chicago 7, Illinois

Gentlemen: Please send me fully illustrated, free booklet giving complete information and "case histories" of Foster-Built Dry-Ice Truck Bunkers.

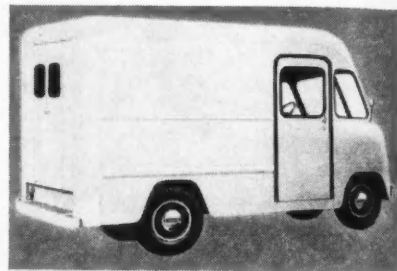
Name.....
Company.....
Address.....
City..... Zone..... State.....

Special-Purpose Bodies

Boyertown Merchandiser

▼ TWO new Merchandiser delivery bodies for the new Ford "Bonus Built" parcel delivery chassis models have been added by the Boyertown Auto Body Works, Inc., Boyertown, Pa.

The MF8 Merchandiser mounts on Ford model F-3, 104-in. wheelbase and is 96 in. long, 74 in. wide, and 71 in. high, resulting in 290 cu ft load space. The MF10 Merchandiser mounts on Ford F-3, 122-in. wheelbase and is 120 in. long, 74 in. wide, and 71 in. high, resulting in 365 cu ft load space.



The Boyertown MF10 Merchandiser

Four more Boyertown bodies on the new Ford parcel delivery chassis, stripped of windshield and cowl, will become available to some fleet owners obtaining these chassis through Ford Motor Co. Boyertown will use its standard windshield and front-end assembly and fenders when mounting these chassis.

Allegheny's Light-Weight Utility

▼ THREE new utility bodies have been added to the line of The Allegheny Body Co., Inc., Philadelphia. The new line, designed for trucks from 1/2- to 2-ton capacities, features several innovations which should interest utilities, contractors, repairmen, fleet operators, and small business men. All models have built-in compartments for tools, supplies and parts. Individual door handles with locks accessible from the ground, make for convenient storing of equipment. Special racks available as extra equipment hold ladders, pipe and other material which may be transported by truck. Of all-metal

42 Here's real coverage!

UNITED MASTER CYLINDERS

United's 42 master cylinders not only give you 98% coverage of all popular makes and models, but longer, better service too! The patented "Uni-Liner Process" insures against leakage and shifting . . . resists corrosion and pitting . . . reduces wear on moving parts. Get full details from your NAPA Jobber. United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7.

UNITED

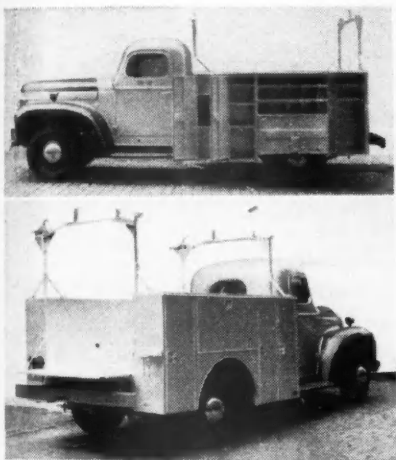
HYDRAULIC BRAKE PARTS • BRAKE CABLES
SPEEDOMETER CABLES • FUEL PUMP PARTS

FREE!
Ask your NAPA Jobber for helpful new manual, "Recommended Service of Automotive Hydraulic Brakes."

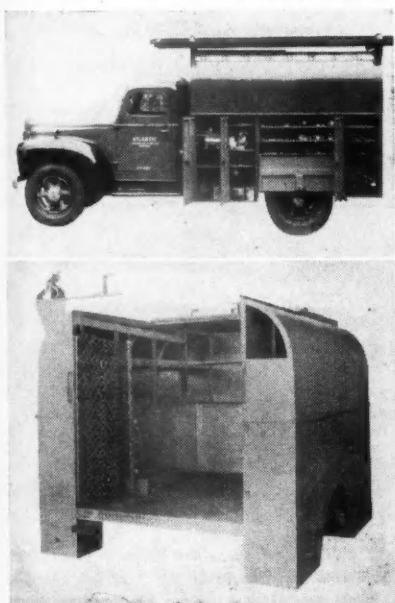
for Trucks

construction, these bodies are electric, gas and spot welded. Replacement parts can be supplied within 24 hours by the manufacturer.

Model 90502 is 90 in. long and weighs 925 lb. Designed for 3/4- and 1-ton vehicles the body is of 16-gage steel, with 1/8-in. diamond deck floor plate. Each side features two waterproof compartments opening from the outside with recessed door handles. A sliding pipe vise is available with this body. This unit mounts on the back panel and can be slid out past the body line for convenient



Two views of Allegheny Model 90504



Side and rear views of model 10254

COMMERCIAL CAR JOURNAL, March, 1949

usage. The left side of the body can be equipped with a ladder rack as extra equipment. The right upright is designed for a pipe rack. Welded tracks make possible the clamping of three sections of various diameter pipes to the rack. Both fixtures are located so the pipe or ladders extend over the cab and out of the way. Bodies are undercoated at the factory to prevent rusting.

Model 90504 is a heavier type body designed for the same capacity vehicles. It is 90 in. long and weighs

1350 lb, fully equipped. This model has all features of the 90502 but is fitted with four compartments on each side.

Model 10254 designed for 1 1/2- to 2-ton trucks is larger but similar in design and construction. This model has a sliding steel roof for protection of cargo or personnel. Body is 102 in. long and weighs 1100 lb. Four doors are provided in both sides, similar to Model 90504. Floor of this model is made of 3/16-in. diamond deck plate.

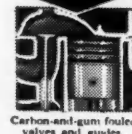


"Fleet's in!" is mighty good news along the coasts—but it's bad medicine for the bus or truck fleet owner! Because, when your fleet's in, it's not on the road, making money. The best way, the surest way and the most economical way to increase your pay-load hours, is by equipping your fleet with AMPCO Units. The AMPCO Vapor Lubricator counteracts friction, heat and wear in the "forgotten zone"—the valve assembly and upper cylinder areas. Its penetrating oil fog removes most of the carbon and tars that slow your engine. Then it seals in lost power. The result is a cooler, quieter motor, smoother operation at low speeds, faster pick-up, more power and more speed. All of which means greatly reduced operating and maintenance costs. But don't take our word for it!—Make this comparative test at our expense: take any two of your fleet, same make, same model, same run. Put an AMPCO on one, not on the other. Then watch the difference! See your AMPCO dealer today about making this convincing test.



AMPCO gives your motor an oil seal for highest compression — the AMPCO oil spray constantly cleans, protects and lubricates valves, stems, guides, rings, pistons and cylinders against scorching heat dragging friction and wear.

AMPCO Prevents



Carbon and gum fouled valves and guides.



Gum varnished cylinder walls.



Gum and carbon clogged piston rings.



Carbon caked pistons.



AUTOMOTIVE & MARINE PRODUCTS CORP.

87 HARVARD AVENUE, BOSTON 34, MASS.

NEWSCAST

Continued from Page 39

WEST COAST TAKES OVER SPOKANE PACIFIC LINES

One of the biggest highway transport deals in recent years, was disclosed recently upon receipt of ICC sanction of a lease-purchase contract, permitting West Coast Fast Freight to take over the Spokane Pacific Lines.

1948 Domestic Truck Factory Sales by Gross Vehicle Weights*

	5,000 & Less	5,001- 10,000	10,001- 14,000	14,001- 16,000	16,001- 19,500	19,501- 26,000	Over 26,000	Total
January.....	28,690	15,458	11,641	17,685	5,615	3,166	1,638	83,893
February.....	32,776	15,623	12,306	16,733	5,983	3,666	1,800	88,888
March.....	44,110	21,222	15,890	24,237	6,708	4,437	1,955	118,572
April.....	43,441	20,671	13,910	21,163	6,667	4,039	2,020	111,911
May.....	37,114	17,132	13,898	18,386	4,734	4,018	1,627	96,909
June.....	37,244	19,741	13,503	18,794	6,310	4,371	1,782	101,755
July.....	35,481	20,716	13,105	19,038	5,063	3,501	1,345	98,249
August.....	38,554	20,744	13,538	16,421	3,595	2,856	1,514	97,222
September.....	33,884	23,303	11,329	15,211	4,946	4,065	1,458	94,196
October.....	31,523	23,008	10,585	16,809	4,193	3,764	1,414	91,286
November.....	29,666	22,677	10,563	16,157	4,894	3,670	1,403	89,030
December.....	28,048	24,599	10,070	17,061	5,589	3,567	1,733	90,667
Total.....	420,531	244,894	150,340	217,695	64,297	45,120	19,712	1,162,589

* Automobile Manufacturers Association.

Truck Trailer Production*

	December	Twelve Months
Vans:		
Insulated and refrigerated.....	224	2,277
Furniture.....	37	546
All other closed top.....	1,476	18,366
Open top.....	198	2,002
Total Vans.....	1,935	23,191
Platforms:		
With cattle and stake racks.....	103	1,590
With grain bodies.....	30	588
All other.....	552	5,330
Total Platforms.....	685	7,506
Tanks:		
Petroleum.....	202	3,176
All other.....	25	374
Total Tanks.....	227	3,550
Pole and Logging:		
Single Axle.....	84	2,059
Tandem Axle.....	72	1,605
Total.....	156	3,664
Low-bed heavy haulers.....	137	1,825
Dump trailers.....	38	669
Off-highway.....	119	2,489
All other trailers.....		
Total Complete Trailers.....	3,297	42,674
Trailer Chassis.....	127	1,952
Total Trailers and Chassis.....	3,424	44,626

* Industry Division, Bureau of the Census.

LAWRENCE STELZLE DIES

Lawrence G. Stelzle, president of Walter Motor Truck Co., died suddenly on Feb. 12.

(TURN TO PAGE 156, PLEASE)

Kaiser Traveler



First photos of the new Kaiser Traveler show how rear opens up for access to 85 cu-ft loading space. Lowest priced model in the line, it is aimed directly at the fleet market. See also page 6.

COMMERCIAL CAR JOURNAL, March, 1949

NEW

De Luxe DILLECTRIC TUBE VULCANIZING OUTFIT

No. 6688
COMPLETE OUTFIT
Including materials for approximately \$73.00 worth of tube repairs
only **\$1485**



Here's a real profit maker that includes a complete assortment of tube repair materials and the new De Luxe Pressure Clamp with the following features—

- New** **OPERATING LEVER**—New cam design does away with screwing down pressure arm. Simply pull the lever forward to stop-pin for exact uniform pressure on all repairs. Eliminates guesswork—saves time.
- New** **PRESSURE ARM**—Cantilever spring incorporated in arm design automatically equalizes pressure on all repairs regardless of thickness of tube and repair.
- New** **PRESSURE PAD**—Larger, softer natural rubber pad, contained by metal rim, compensates for irregularities in tube and repair thickness. Assures perfect feather-edge repairs.
- New** **"OFF AND ON" INDICATOR**—Now protected from dirt, moisture and damage by enclosure in a transparent plastic cover.
- New** **STURDY CONSTRUCTION**—Designed with a minimum of moving parts and strongly made for hard usage with trouble-free service.
- GUARANTEED FOREVER**—If at any time, regardless of date of purchase, a Dillelectric Pressure Clamp becomes damaged or requires repair of any kind, we will either recondition it to perfect working order or replace it at our option with a new one at no charge whatsoever.

*Write for complete descriptive folder
THE DILL MANUFACTURING COMPANY
700 East 82nd St., Cleveland 3, Ohio
Branch—1011 S. Flower St., Los Angeles, Calif.

HERE'S WHAT YOU GET

- 1 No. 6685—DE LUXE PRESSURE CLAMP with transformer for 110 or 125 or 220 volt A.C.
 - 50 No. 6611—ROUND PATCH UNITS
 - 50 No. 6612—OVAL PATCH UNITS
 - 15 No. 6607—LARGE ROUND PATCH UNITS
 - 10 No. 6608—LARGE OVAL PATCH UNITS
 - 5 VALVE STEM UNITS (3 No. 1415, 2 No. 1425)
 - 1 No. 6617—WIRE BUFFER
- Order Today**
from your Wholesaler,
Tire or Oil Company

NOW USED IN MORE THAN 100,000 SERVICE STATIONS

DILLECTRIC

Speed Patch
ELECTRICALLY VULCANIZED
TUBE REPAIRS

THE
GREATEST VALUE
EVER OFFERED
FOR YOUR COMPLETE
TUBE REPAIR
SERVICE

No. 6685 DILLECTRIC PRESSURE CLAMP
ONLY, INCLUDING WIRE BUFFER—\$7.50



USERS REPORT BIG SAVINGS IN SERVICE COSTS

Benium is the password to profit these days. Fleet operators are discovering that rugged Eclipse Brake Blocks reduce maintenance charges to a bare minimum—with lots of extra trip mileage between overhauls. That adds up to important cash savings in the long run with safe, smooth stops all the way. So, get in on the pay off. Install Eclipse Brake Blocks all around. Watch the results and see for yourself what a difference *Benium* makes in your fleet.

BENIUM* Heat-resisting material is the secret ingredient developed by the Marshall-Eclipse Division of Bendix and used exclusively in Eclipse brake linings and heavy-duty brake blocks.

Eclipse Brake Blocks

A PRODUCT OF **Bendix**

Greatest Name in Braking!

MARSHALL-ECLIPSE DIVISION OF
TROY, NEW YORK



"Follow the Leader"



More than a matter of **muscles**

The Greeks had a word for it . . .

the original "long run" champion, Pheidippides, proved it in his epic race from Marathon to Athens in 490 B.C.



We call it stamina—and prove it every day with the Hendrickson tandem designed to give your rig maximum strength with minimum weight . . .

best for the long run.

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

NEWSCAST

Continued from Page 154

INDUSTRIAL NOTES

International Harvester Co. has completed arrangements for construction of a new building at Linden, N. J. which will serve as a motor truck transfer house facilitating truck distribution in the greater New York and Philadelphia areas.

New England Auto Products Corp., Pottstown, Pa., manufacturers of Universal Joints and other products has changed its corporate title to Neapco Products, Inc. Officers remain the same and products will continue to be manufactured under the trademark "Neapco."

Spencer Thermostat Co., Attleboro, Mass., which has operated as a wholly-owned subsidiary of Metals & Controls Corp., now becomes the Spencer Thermostat Division, Metals & Controls Corp. There will be no change in management or operating policy.

The Rust Master Chemical Co., Boston, will complete a move to new quarters at 50-56 Creighton St., Cambridge, Mass., where a modern two-story building houses completely new machinery and equipment.

NEW FORD DIVISION

Henry Ford II, president, Ford Motor Co., announced last month the formation of the Ford Division of the Ford Motor Co. as a "further important step in the company's decentralization plan." Lewis D. Crusoe, who has been serving as vice-president—Finance, was named vice-president and general manager of the new operating division.

ATA SETS UP FIVE NEW COMMITTEES

The Regular Common Carrier Conference of ATA, has announced formation of five new committees, including one to study operating practices and develop methods of improving common carrier service to the general public. D. L. Sutherland of Middle Atlantic Transportation Co., New Britain, Conn., was named chairman.

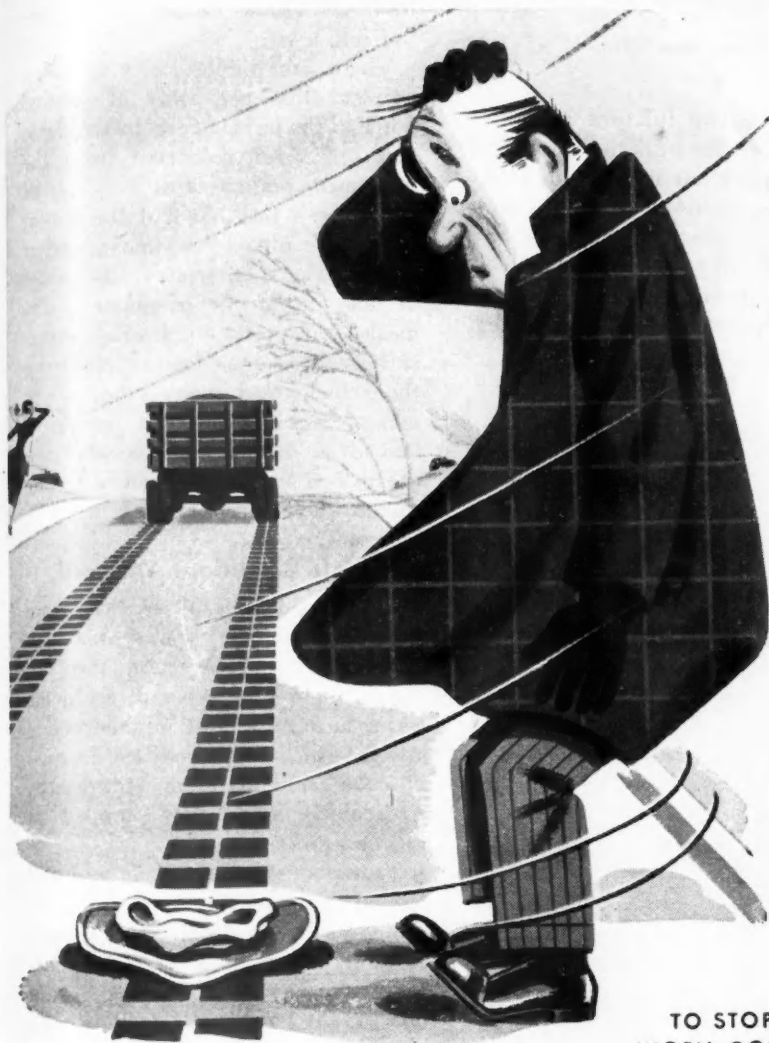
A second committee will study terminal operations and specifications with a view to developing uniform operating methods, dimensions and similar specifications. W. W. Callan of Central Freight Lines, Inc., Waco, is chairman.

An administrative committee will, among other things, work on legislative matters affecting common carriers. The chairman is C. J. Roush of Roadway Express, Inc., Akron, Ohio.

A publicity committee will be headed by B. D. Davidson of the Davidson Transfer and Storage Co., Baltimore, and a liaison committee (no chairman announced) will coordinate Conference activities with those of ATA.

(TURN TO PAGE 209, PLEASE)

SELF-CONTROL STARTS HERE



and to Restore ENGINE PERFORMANCE OIL-CONTROL STARTS HERE

TO STOP OIL-PUMPING REPLACE
WORN CONNECTING ROD BEARINGS

Good cost control starts with accurate location of leaks. Worn bearings can be a costly leak in fleet operation.

Worn bearings lose their metering control over oil flow. They let excess oil enter combustion chambers. It burns to performance-stealing carbon on pistons, rings, valves and spark plugs. Even the best of new piston ring jobs cannot handle oil pumping caused by excessively worn bearings.

Give the rings a chance to do their *own* job. *Every time* the engine is down, check for worn bearings—replace them with Genuine Federal-Mogul Oil-Control Bearings. It's economy in the long run—and a *smooth* run in the bargain!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
COLDWATER, MICHIGAN



*The Complete Line—
Almost 7,000 Numbers*

Engine Bearings • Bushings
Connecting Rod Exchange
Reconditioned Connecting Rods
Rebabbitted Connecting Rods
Connecting Rod Bolts and Nuts
V-Seam Piston Pin Bushings
Bearing Metals • Laminated Shims
Soldiers

CONTROL OIL-PUMPING
WHERE IT STARTS—WITH

FEDERAL-MOGUL

OIL CONTROL BEARINGS



SAFETY—How Dan Dugan Does It

Continued from Page 99

fifth of the national average for this type of equipment.

To further reduce the number of chargeable accidents and to gain even better cooperation from each member of our organization, we have employed a full-time safety and personnel director, who has been fur-

nished with two full-time assistants.

While all the work we have done to accomplish our measure of safety would be completely worth while for safety's sake alone, there is also a money and profit angle involved. There is profit in good safety records. True, we have insurance that

provides for everything except the certain rise of tomorrow's sun, but insurance checks do not pay the entire bill.

There are hidden costs in every accident that eat away at profits. Some of the hidden costs in accidents that are never recovered from the insurance company are: The loss of the owner's time, loss of the superintendent's time, the time of other employees, loss in trips to the scene of the accident, telephone calls, meals, transportation, towing, make-shift repairs, time lost in replacing the vehicle, and many other direct money losses besides the intangible loss of goodwill or loss caused from creating a bad impression with the public whether just or not.

Unsafe Conditions Analyzed

IN combating unsafe conditions we try to view all the aspects of a condition and fully correct it. For instance, one of the types of accidents which have been most troublesome is one in which other vehicles crashed into the rear-ends of our transports, particularly when they stopped at railroad crossings or stop signs.

Trucks must be kept clean and well lighted to prevent rear-end collisions at night and everything possible must be done to prevent it. For this purpose we are equipping our entire fleet of 70 trucks and trailers with "Scotchlite" striping on the rear of our tanks. Our tests show that a transport so equipped can be seen as far as 800 ft in the reflection of the headlights of another vehicle.

We try to operate with caution because we bear in mind that the right-of-way over which we drive belongs to the public, and that it behooves an oil transport to operate with more than usual caution because of a natural prejudice of the public against gasoline trucks.

Drivers Contribute Ideas

MANY of our safety ideas originate with our drivers. Recently our drivers started promotion of safety discussions among drivers at coffee stops. We heartily endorse and encourage safety thinking and safety discussions. We try to teach our drivers that courtesy under all conditions is in itself an important safety factor. Habitual courtesy leads to the habit

(TURN TO PAGE 160, PLEASE)



Meets I.C.C. requirements for trucks and buses

REFLECT-O-FLARE is Safe—visible at night more than half a mile; even winds of 50 miles an hour can't blow it over.

REFLECT-O-FLARE is Dependable—always ready to use; no maintenance ever required. Sets up in a matter of seconds; easily returned to carrier.

REFLECT-O-FLARE is Compact—a set of three, in a convenient carrier, weighs only 5 pounds, and takes up a space of only 8"x4".

REFLECT-O-FLARE is Economical!

You need the modern, positive protection Reflect-O-Flare gives you and your vehicles. Reflect-O-Flare exceeds ICC requirements, is approved by Underwriter Laboratories as well as by most states. For greater safety after dark, get the Arrow REFLECT-O-FLARE.

Set of three flares furnished with a handy carrier for mounting on vehicle. 3" plastic reflex lens. Durable baked-on red enamel finish.



safety
after
dark

ARROW SAFETY DEVICE COMPANY
MOUNT HOLLY, NEW JERSEY

For Safety's Sake...Reline With CoMaX

BIG or small...use WAGNER

CoMaX

for them *all*



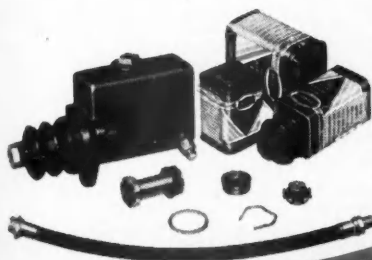
Turn out better brake jobs . . . with more mileage between relinings with superior CoMaX Brake Lining. Unsurpassed for quick, safe, smooth stops, it has exceptionally long-wearing qualities and is uniform in texture, noncompressible, age-proof and easy on the drums.

Specify CoMaX for *all* your brake lining needs . . . available in sets, rolls, blocks, slabs or cut segments to handle everything from your lightest pick-up to heaviest tractor-trailer units. Like Wagner Lockheed Hydraulic Brake Parts and Fluid, it is warehoused throughout the U. S. and Canada, and is available everywhere through Wagner wholesalers.

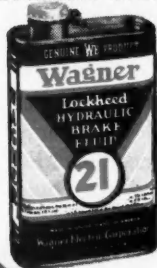
* * *

For added safety . . . get Wagner Air Brakes—the *only* air brake with the Rotary Compressor.

REPAIR with genuine
Wagner Lockheed Brake Parts



REFILL with Wagner
Lockheed Brake Fluid



Ask for Bulletins HU-17G and
HU-197...Tips for Better Brake
Service—free on request

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LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRoL
CoMaX BRAKE LINING • AIR BRAKES • TACHOGRAPHS
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

You can depend on Wagner Quality because:
Wagner Products are used as Original Equipment by Automobile Manufacturers

SAFETY . . .

Continued from Page 158

of cool, clear thinking under stress. A driver trained in courtesy never drives with a chip on his shoulder. We try to teach courtesy and safety higher than the law or posted rule, to the end that accidents will be avoided no matter how badly the other fellow drives or what laws he violates.

We were recently highly honored and encouraged in our safety program when 31 of our drivers qualified for national safety awards. We took this occasion to honor the drivers with a banquet and Governor George T. Mickelson of South Dakota presented the awards to each driver. These 31 men had driven for from one to five-year periods without having a preventable accident, representing more than three and a half million miles of accident-free driving.

Safety Committee

AN important factor in our safety program that is rapidly widening its scope of influence, is our Safety Committee which meets monthly. It is part of our plan for employee participation in management of the business. The safety committee is composed of drivers and maintenance men elected by their fellows. The committee works unhampered. While a representative of the management side of the business attends the meetings, along with safety and personnel representatives, they are there to co-



Safety inspector checks reflector flares, not only for presence on the vehicle but also for their condition

operate and answer questions and not to oppose any safety recommendations the committee wants to make.

This committee has assurance from our management that every recommendation they make will be acted upon promptly and efficiently. Each recommendation made is numbered and recorded and the committee keeps check on its final disposition. Here are some actual recommendations passed at a recent meeting:

"Recommendation No. 14: It is suggested that drivers are pulling out too quickly at the Standard Pipeline terminal. Sometimes a loader is on the tank and the tanks are slippery. The committee recommends a 'Safety Flash' bulletin cautioning drivers not to pull out until the loader signals 'OK'."

A "Safety Flash" was issued on this and mailed to the home address of every driver, as well as posted on all bulletin boards.

The committee had before it for discussion, for several meetings, the procedure for drivers when encountering snow banks on the roads, a serious consideration in this part of the country. Here is the recommendation:

"Recommendation No. 18: Ken Heath reported he had been making a study of the proper way to hit snow banks and the methods now used by drivers. He had talked with all of our drivers and several drivers from other outfits . . . He reported that the general idea seemed to be to drop down one gear and hit it hard. One driver suggested hitting drifts at half throttle, using the reserve to keep the tractor pulling. Green suggested that rolling into drifts and backing out was a good way. The committee felt that the increased power and the rock service tread on tires made this no longer necessary. Harris suggested hitting trailer brakes just before plowing into drifts. The committee recommended caution in bucking drifts but could not recommend a definite rule."

Suggestions and recommendations may lead to the state highway department or our own shop. Here are two examples:

"Recommendation No. 26: Clarence Larson made a report on road conditions. He pointed out a number of problems had been corrected since the last meeting. He reported the

(TURN TO PAGE 164, PLEASE)

All Budd Wheel distributors can provide the same kind of service illustrated on the opposite page

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel, Inc.
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MINNEAPOLIS—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robbles, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robbles, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robbles, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

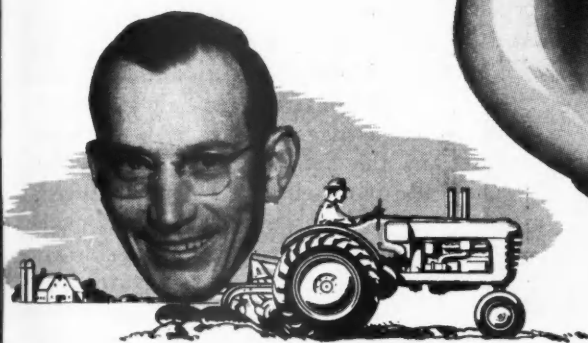


Rolled Into One!"



"We do a pretty brisk business on cartridge replacements and have found the new Walker Oil Filter gets better results—and is easier to install. We used to run into trouble on a lot of our changes with oil leakage around the top, but Walker has stopped that entirely with a positive compression seal."

—J. D. ANDREWS and V. R. COON
Perryton Sinclair Service



"Heavy dust conditions are natural in our area. Keeping oil clean—free from grit—always was a tough problem until we tried the new Walker Oil Filter. There's been a real change in the oil filtration these boys are getting—and we know Walker will add plenty of life to their engines!"

—JACK YOKLEY
Canadian Implement Co.



Guarantee

The Walker replacement cartridge with patented Laminar construction is guaranteed against channeling, by-passing or migration of the filtering material. Any cartridge found not to comply with this representation will be replaced without charge.

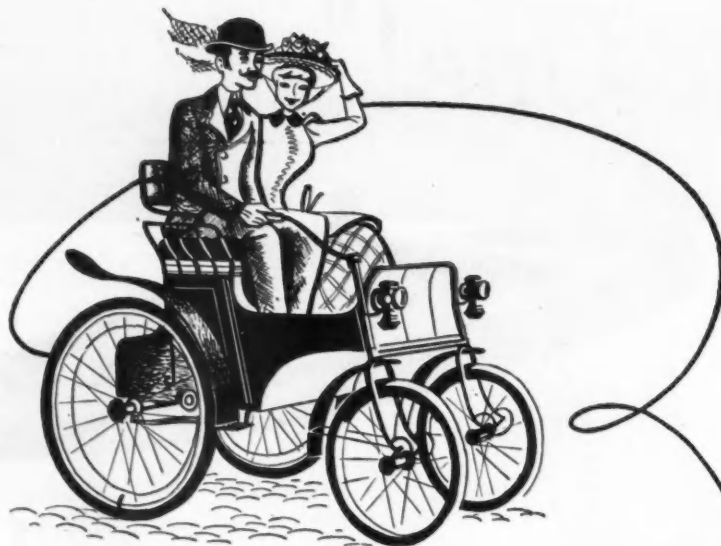
OIL FILTER

WITH PATENTED



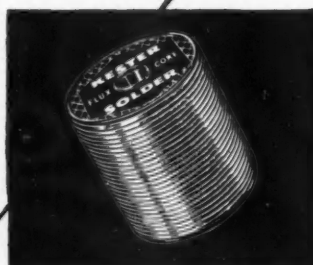
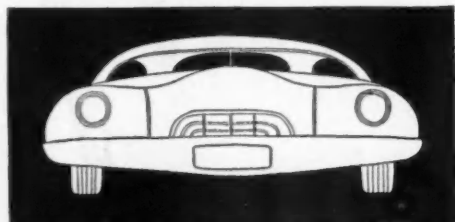
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50 Years of Progress with Kester Solder

*In the automotive industry 50 years ago,
a great many parts were made of brass
or copper. Headlamps and other lights,
intake manifolds, radiators, horns,
tubing, conduits, and gasoline
tanks were all soldered.*



THE LEADER IN THE FIELD

Today, Kester Acid-Core Solder is a necessity for fast, efficient repairs even as it was in those early days. Insist upon it from your jobber.

Standard for the Automotive Trade Since 1899

Kester soldering fluxes . . . salts, paste, and liquid . . . are available in several handy-to-use units. Order them from your jobber today.

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**KESTER
SOLDER**

SAFETY . . .

Continued from Page 160

first curve on US 14 west of Lake Preston had no curve sign from the east; a bad bump at the bottom of Arlington Hill with no warning sign. Committee recommended correction."

"Recommendation No. 29: Warner made a brief report on safety for personnel. He reported that slips on rigs were the biggest problem and that something should be done to prevent falls. Green and Olson reported on the use of mash to prevent slips. Olson (safety director) also pointed out that there were other materials, abrasive mastic, abrasive floor covering and the like which should be tested. Larson asked for this on running boards of K-12's as well. The committee recommended further checking."

Safety Bulletins

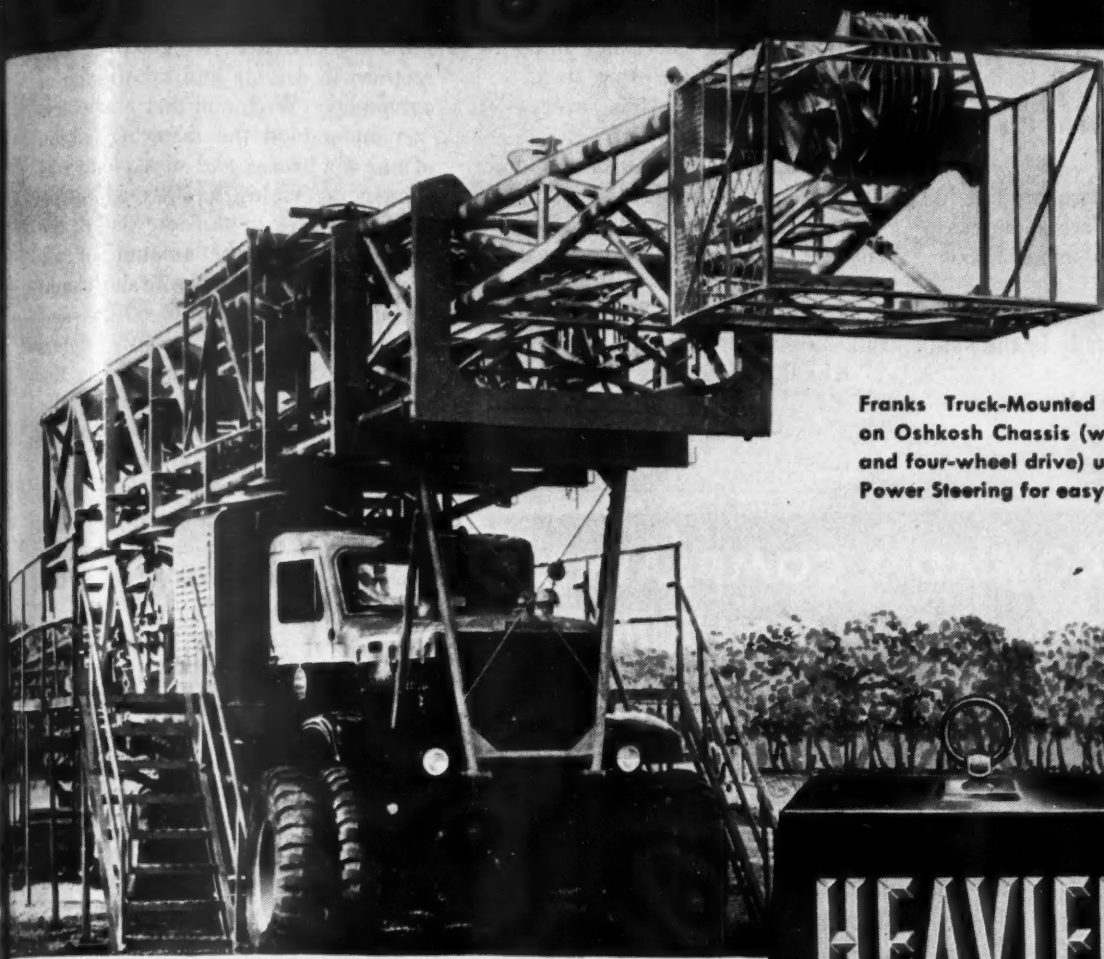
BESIDES the work of the Safety Committee we reach all our employees with a single page bulletin which we call the "Safety Flash." This is passed out to the men and also mailed to their home address so that everyone sees it. The information may be issued as a result of a recommendation from the Safety Committee, a suggestion from an employee, by the Safety director, or I often use it myself to get a point directly to my drivers. One of these is reproduced at the beginning of this article.

The "Safety Flash" has turned out to be a popular piece of safety promotion but probably our most popular piece is our new house organ magazine, DUGAN BOINGS, which provides news of all the activities of our people and an open forum for the discussion of the business, safety and maintenance.

We also find many great opportunities to bring home the message of safety. One of our employees had the misfortune to lose his home and contents by fire. Naturally everyone in the organization was sympathetic and the fire was the topic of conversation for days. A small fund was raised to help him out.

Along with the story in DUGAN BOINGS, we mentioned that this could happen to any of us, just as a tanker fire could happen any time,

(TURN TO PAGE 166, PLEASE)



Franks Truck-Mounted Rotary Drilling Rig on Oshkosh Chassis (with dual front wheels and four-wheel drive) uses Vickers Hydraulic Power Steering for easy and SAFE STEERING.



VICKERS *Hydraulic* **POWER STEERING**

VICKERS HYDRAULIC POWER STEERING IS Effortless, Positive, Shockless.



Vickers Hydraulic Steering Booster with Integral Overload Relief Valve. Bulletin 47-30a.

Vickers Balanced Vane Type Pump is Engine Driven. Bulletins 36-12 and 49-52.

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WASHINGTON • WORCESTER

With ordinary steering, front-wheel loading is sharply limited by what the driver can pull and by acceptable steering gear ratios. But with Vickers Hydraulic Power Steering, the driver doesn't have to pull . . . hydraulic power does the work. Front-wheel loading can be any amount the chassis can take. No matter how much it is, the steering is effortless and safe. The Vickers Hydraulic Booster puts no load on the steering gear. The steering force reaction is absorbed by the frame . . . so front-wheel loading does not affect the steering gear. Write for Bulletin 47-30a for the many other advantages of Vickers Hydraulic Power Steering.

3822

SAFETY . . .

Continued from Page 164

and that a man can lose his life in a tanker fire, so here are some easy to remember rules to avoid tanker fires:

"1. Check the wiring for shorts or worn insulation, especially in the battery cable.

"2. Keep the motor clean. Grease will keep it burning.

"3. Check the emergency brake to be sure its off before every start.

"4. Check your tires every 50 miles—don't drive a flat.

"5. Don't fill the tanks too full. Expansion can overflow them.

"6. Keep the unit well greased and oiled. Friction generates an amazing amount of heat.

"7. Keep that fire extinguisher full.

"KEEP COOL! PREVENT THAT FIRE!"

In the superintendent's corner in

DUGAN DOINGS, we get over corrections in driving and knowledge of equipment. We found that not everyone understood the metering action of our air brakes and so a piece was printed describing how by adjusting the hand valve or the foot pedal, the driver can vary the amount of air pressure delivered to the brake chamber all the way from 5 to 60 lb—and the brake chamber pressure determines the braking force. Thus, the driver may definitely control the brakes of his truck. By keeping in mind that he is operating a brake valve capable of finely graduated brake control, he can regulate the exact amount of drag on the rig he wants—either on the trailer or on the complete unit.

Some highly interesting suggestions are turned into DUGAN DOINGS by our drivers. One reminded other drivers that it was just as important to have the static chain on the ground when the tank was empty as it was when loaded, that the average fellow of 35 has but seventeen million more minutes to live, and that when you take a chance you only save a minute.

One of the prize slogans was turned in when we were pressing down on stopping at railroad crossings. It read "Remember this if you're spared, that trains don't whistle because they're scared."

We can never relax our vigil in the fight for safety, and as for Dugan, we're out for the safest and most dependable mile in the history of the business.

END

(Please resume your reading on P. 100)

MOST COMMON COMPLAINTS

POOR SPRING CONSTRUCTION . . 110

POOR SEAT UPHOLSTERY 118 **91%**

POOR STITCHING and BINDING . . 82

OTHER 31

TOTAL 341



IN ORIGINAL EQUIPMENT

91% OF SEAT COMPLAINTS*
CAN BE AVOIDED by installing
TRAVEL COMFORT CUSHIONS

*The survey from which these figures were taken covered 176 fleets . . . 27,198 vehicles. That's a big sample. And a lot of complaints! Of truck seats commonly used, only 10% were found satisfactory.

You can avoid the most common faults . . . with a maximum of convenience and economy.

Install McInerney Travel Comfort Cushions. They are engineered to fit your cab design. The cushion spring constructions are developed scientifically for your particular vehicle, then upholstered and covered by expert "tailors" in your choice of materials. All you do is set them in the job.

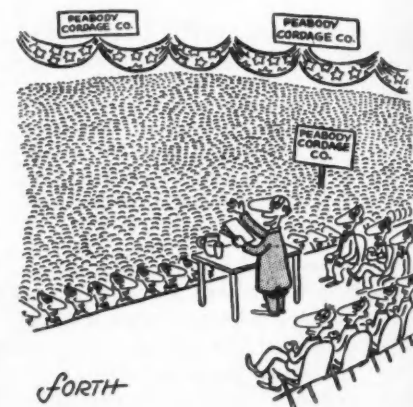
The construction of Travel Comfort Cushions is fully guaranteed. You are assured of finest spring construction, superior upholstery and excellent workmanship throughout. And drivers of your vehicles will enjoy sustained comfort because Travel Comfort Cushions are designed to eliminate road shock and thereby lessen riding fatigue.

THE WAY TO BETTER SEATING: McInerney seating engineers will gladly work with you in developing comfortable, trouble-free seating units for your vehicles.

McInerney

SPRING & WIRE COMPANY

407 GUYMON AVENUE, S. W. • GRAND RAPIDS 2, MICHIGAN



"I am proud to announce that our company now has two trucks!"

COMMERCIAL CAR JOURNAL, March, 1949

**"WORLD BESTOS is the only Brake Block
we can put on and forget"**



"Real Performance" . . . "Downright Economy"

THE fifteen tractor-trailer units of Diamantine Brothers, Hayward, California operate over a wide variety of road conditions. Hauling heavy loads through city streets and congested roads, over high-speed highways and mountain gradients that are steep as well as long, this service puts brake linings to the severest of tests. For over three years Diamantine Brothers have standardized on World Bestos Brake Blocks.

"World Bestos Blocks stand up best under our tough braking conditions," says Mr. Frank A. Diamantine. "They are the only lining we can put on and forget until time to reline. We get real performance and downright economy out of using World Bestos Blocks."

Operators of heavy-duty equipment everywhere get such performance from World Bestos Brake Blocks. These linings wear slowly in even the most severe service while providing a stable, resilient friction under all operating heats and pressures. For proof, reline with a set of World Bestos Blocks and compare them to those you now use.

BRAKE LININGS



BRAKE BLOCKS

World Bestos

CORP.

6637

NEW CASTLE • INDIANA

PRIVATE

Operators Discuss Mutual Problems at Annual Meet

AMONG the numerous subjects discussed at the tenth annual meeting of the National Council of Private Motor Truck Owners, Inc., held Jan. 27-28 at the Hotel Claypool in Indianapolis, Ind., were the current threats and legal aspects of the for-hire carriers' efforts to limit private truck operations; the place of the private truck in national defense planning; the effect of recent Supreme Court decisions and administrative rulings of the Federal Trade Commission with regard to delivery-point pricing practices and freight absorptions;

pending legislation affecting private trucks, and the proposed revision of Federal motor truck safety regulations.

Col J. Monroe Johnson, ICC Commissioner and ODT Director and recently appointed Chairman of the Domestic Transport and Storage Committee of the National Security Resources Board, spoke of the general plans now being prepared by the Board for the mobilization of all transportation facilities in the event of another national emergency, and the role that the private truck operator would occupy in such planning for future defense needs.

The Council subsequently adopted a resolution urging the NSRB to avoid the mistakes in transportation organization and administration made during the last war in attempting to deal with all highway transportation as one industry by "establishing within the NSRB Office of Transport and Storage a private highway transportation section as advisers and consultants to the Director, or a committee or group which would contain representatives from at least the more important, if not all, of the various industry committees which will function under NSRB." Such a procedure, the Council said, will work out solutions, or at least sharpen points at issue on which decisions must be made, where differences of interest may develop between private motor transportation on the one hand and the various for-hire transport agencies on the other.

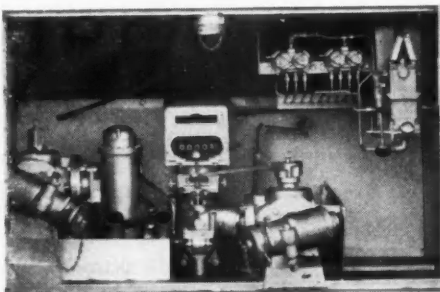
Another resolution adopted at the Council's meeting dealt with the problem of trade barriers caused by the diversity of state laws governing vehicle sizes and weight limitations. It recommended that "a committee be appointed immediately to work with the Public Roads Administration, the American Association of State Highway Officials, the National Highway Users Conference, the American Trucking Associations, the Society of Automobile Engineers and similar interested groups to the end that a

(TURN TO PAGE 170, PLEASE)

ATLANTIC USES S&J *Internal Safety Valves*

The Atlantic Refining Company is another of the major marketers of petroleum products who stress SAFETY in all of their operations. They know that there are no short cuts in SAFETY, and in the production, storage, handling and transportation of their products, they go all out for SAFETY.

For years they have used S. & J. Internal Hydraulic Safety Valves in the compartments of their truck tanks. These valves are opened by hydraulic pressure, and in the event of serious accident or fire while discharging, the release of the hydraulic pressure closes the valves automatically. This method represents the maximum SAFETY to the public, to Atlantic equipment, the product, and their personnel. May we send you our catalog on Hydraulic Internal Safety Valves?



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There's nothing like confidence!

For nearly 50 years, painstaking laboratory tests by many of the country's motor car manufacturers as well as the actual experience of users in the field have demonstrated the *dependable performance* of Ditzler Finishes. That's why you'll find them used—with complete confidence—by most of the builders of today's passenger cars, trucks and busses. There can be no more convincing proof of the superiority of Ditzler Finishes for all refinishing needs.



**DITZCO QUICKSET ENAMELS are outstanding
in durability, workability and appearance**

• The same basic formula furnished to the nation's largest passenger car and commercial body manufacturers is available in air-dry Ditzco Quickset Enamels for the refinishing trade. These enamels, primarily designed for use in repainting metal bodies are produced in hundreds of solid colors, polychromatics and the new sympho-chromatic series—plus blacks, whites and silvers. No better finishes are made.



DITZLER

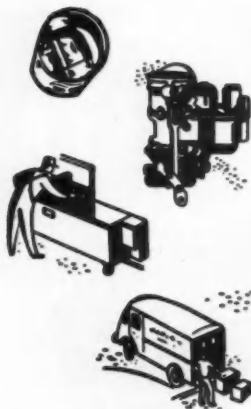
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PITTSBURGH PLATE GLASS COMPANY



STRONG REASONS FOR USING **MAGNUS 755**

It's a *Multi-Purpose* Cleaner



- ① Removes the most stubborn carbonized oil deposits from pistons, connecting rods, etc.
- ② Cleans carburetors, oil, fuel and water pumps quickly and thoroughly without hand work.
- ③ Cleans all other dismantled engine parts.
- ④ Desludges engines without dismantling.

It's a *Thorough* Cleaner in *Cold or Hot* Solution



- ⑤ Works well in cold, still tanks; better and quicker in warm solution, but best and fastest of all in Magnus Aja-Dip Cleaning Machines.

It's a *Lasting* Cleaner



- ⑥ When other cleaners of this type are exhausted, Magnus 755 solutions are still going strong, with months of service life remaining.

It's a *Safe* Cleaner



- ⑦ Non-toxic, non-corrosive. Safe for all metals, and harmless to gaskets and packing.

It pays to stock up with Magnus 755. It is speedier, more thorough and more economical than any other cleaner on many cleaning jobs.

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IN FLEET MAINTENANCE IT'S
MAGNUS
CLEANERS • EQUIPMENT • METHODS

Private Operators

Continued from Page 168

sound, workable, uniform code, based on competent engineering and economic analysis, be developed covering the size and weight limitations for commercial motor vehicles."

Orville A. Brouer, of Swift & Co., Chicago, Ill., spoke about the private truck as a plant facility in industry, and William A. Quinlan, Council attorney, discussed the legal aspects of the efforts being made by the for-hire interests to limit and restrict private truck operations.

Others participating in the Council's program included Arthur C. Butler, director of the National Highway Users Conference, who reviewed the highway transportation legislative picture for 1949; G. R. Wellington, chief of the Section of Safety, ICC Bureau of Motor Carriers, who discussed the proposed revisions of the ICC safety regulations; and W. H. Ott, Jr., general traffic manager of Kraft Foods Company, Chicago, who spoke of the place of the private truck in national defense planning.

Senator Homer E. Capehart, of Indiana, addressed the group at one luncheon meeting on the subject of competitive pricing practices and their relation to free enterprise.

The Private Truck Owners of Indiana Inc., a state organization affiliated with the Council, entertained members of the Indiana State Legislature and the convention guests at a special banquet on the evening of Jan. 27.

The following officers and directors were selected to conduct the affairs of the National Council during 1949:

President: George Faunce, Jr., Continental Baking Co., New York.
Eastern vice-president: A. B. Gorman, Esso Standard Oil Co., New York.
Central vice-president: G. H. Sibley, Jewel Tea Co., Barrington, Ill.
Western vice-president: P. H. Ducker, Automotive Council, Los Angeles.
Southeastern vice-president: J. J. Riley, American Bottlers of Carbonated Beverages, Washington, D. C.
Treasurer: Robert C. Hibben, International Assn. of Ice Cream Manufacturers, Washington, D. C.
Directors: F. L. DeGroat, Jos. Schlitz Brewing Co., Milwaukee, Wis.; C. F. Hawes, Dairymen's League Cooperative Assn., New York; J. C. Kelper, G. Krueger Brewing Co., Newark, N. J.; H. P. Sulter, Merck & Company, Inc., Rahway, N. J.; P. A. Anderson, Private Truck Owners Bureau of California, San Francisco; O. A. Brouer, Swift & Company, Chicago; D. C. Fenner, Mack-International Motor Truck Corp., New York; E. M. Featherston, Jr., Colonial Stores, Inc., Norfolk; Leo Huff, Pure Oil Co., Chicago; A. E. Kreuder, Wilson & Co., Inc., Chicago; E. J. O'Hara, Sheffield Farms Co., Inc., New York; W. H. Ott, Jr., Kraft Foods Co., Chicago, and J. B. Pymer, City Baking Co., Baltimore.
Leon F. Banigan is managing director of the Council with headquarters in the National Press Building, Washington, D. C.

ROBERT F. JONES DIES

Robert F. Jones, president and general manager of the U. S. Truck Co., Inc., died Feb. 2, at his winter home in Ft. Lauderdale, Fla.

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**OPERATING PROFITS
FOR YOU IN THIS**

TRAILMOBILE



**THIS IS
YOUR**
Bonus Profit
**FROM THE
EXTRA
PAYLOAD**

Increase your net profits with more payload every trip — up to 3000 pounds more — with the new All-Aluminum Trailmobile. It's bonus load—made possible only with this perfected combination of lighter material, special shapes from exclusive dies and distinctive Trailmobile assembly methods. Stronger and lighter, it hauls a higher percentage of profit cargo within overall load limits. On top of that, it will never rust—it saves you any cost of repainting or refinishing. Load-proven in the field over some of the toughest hauling operations. The most critical analysis shows the AA Trailmobile is the highest net profit maker on the highway.

MORE PAYLOAD	AV. RATE PER 100	TRIPS PER WEEK	EXTRA PROFIT PER YEAR
1500	40	6	\$1,872.00
1700	45	6	2,286.80
1900	50	6	2,964.00
2100	55	5	3,003.00
2300	60	5	3,588.00
2500	65	4	3,380.00
2700	70	4	3,931.20
2900	75	3	3,393.00
3100	80	3	3,868.80

Call Your Trailmobile Representative for Full Details of this Sensational Trailer Value.



CINCINNATI 9, OHIO

BERKELEY 2, CALIFORNIA

Super Overhaul for High Mileage

Continued from Page 79

side-arm gas heater is connected in the hot water line and a constantly running centrifugal pump operated by a 1/4-hp electric motor keeps the solution in motion by pumping it out of the tank, through the heater coils and back.

The cleaner makes it possible to spot cracked, damaged or unfit parts. Most parts soak in the circulating solution for a minimum of twelve hours.

When engine blocks and their associated parts come out of the cleaning vat and have been examined, the

block and parts to be reused are made ready for reassembly. All the parts such as camshaft, pistons, rocker arms, connecting rods, timing gear covers, oil pump, distributor, are placed in a table-high bin made for that purpose (Fig. 2). This bin is mounted on casters and is easily moved near to the block. If new pistons are indicated they will be made up at the bench and sized on the piston grinding machine (Fig. 4), then delivered to their proper bin.

This same procedure applies to all replacement and reconditioned parts with the exception of valves and head. Valves and head are reconditioned in a separate production line operation which was described in January CCI, page 67.

The block is set up on an open table or engine stand of our own design (Fig. 1) is made of 2x6-inch lumber, with and without casters. The stand on which the engine is rebuilt on is without casters and offers a solid base for this operation. Usually the block is inverted on the stand so that the crankshaft can be installed. Main bearing caps are laid out opposite their respective bearings. The measurements of the crankshaft journals will determine bearing sizes, because at this overhaul the crankshaft will probably be reground to some standard dimension, or if the removed shaft has already been cut to .030 in., the block will get a new shaft.

When an engine has been assembled

(TURN TO PAGE 174, PLEASE)

THE BIEDERMAN TRUCK



An All-Star Truck

Constructed of All-Star Units

Doing an All-Star Job Since 1920

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself. Nothing but the most sturdily constructed units by America's leading manufacturers are built into it. It has strength, durability, comfort for the long drive, accessibility of every part and modern design.

There is still some territory open. This is your opportunity to secure the Sales Franchise of a quality product. Write or wire us today for complete specifications and details.

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

Out-Sized Dumper



Here's the first of five new Kenworth dump trucks being delivered to Castle Dome Copper Co. of Arizona. Each carries a payload of 30 tons, is powered by a 275 hp Cummins NHBS engine, and has the new Timken FU 900 front axle having 25,000 lb capacity. Because of their tremendous size they had to be delivered on a special off-peak traffic schedule



There *IS* an easier way... with a **HEIN-WERNER** **HYDRAULIC JACK**

Don't be annoyed by inefficient, time-wasting methods of lifting your truck for quick repairs on the road. Depend on a Hein-Werner Hydraulic Jack—the fastest, safest, easiest-operating jack you can carry. It gets the wheel up in a hurry—to stay up securely.

Precision machined H-W Hydraulic Jacks have extra-strength pressure-tested malleable iron base, handle socket and top nut to reinforce at points of greatest strain. The exclusive Heinite Piston is proven to withstand ten times the wear of conventional cups or packings.

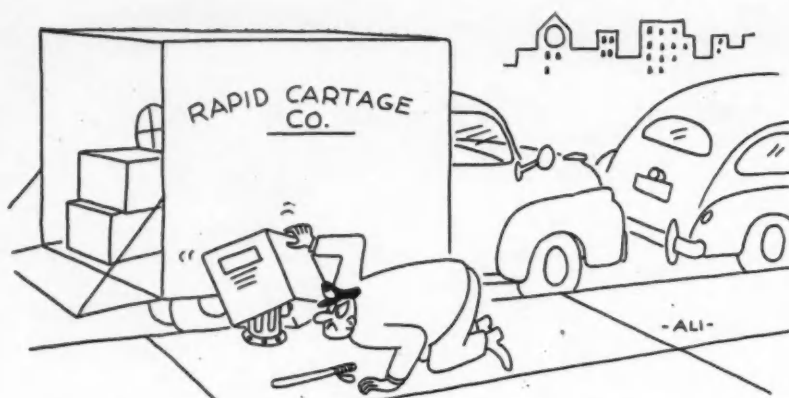
Every Hein-Werner Jack is factory-tested at 1½ times its rated capacity to do more than expected on every job. See your H-W distributor or write us for complete details today.



Made in models of 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity, as well as Bumper-Lifts and Axle Jacks for passenger cars and service jacks for shop use.

HEIN-WERNER

CORPORATION • Waukesha, Wis.



Holland TRUCK AND TRAILER EQUIPMENT

Redesigned

and

STRENGTHENED



To meet today's increased demands of truck-trailer equipment.

Holland Hitch's new equipment is far sturdier than ever before. It has been designed to provide reliable service under even the most rugged operating conditions. Write for full information on the new Holland truck and trailer equipment.

for SAFETY . . . ECONOMY . . . DEPENDABILITY . . . SERVICE

Look to Holland
for assistance with
your truck equip-
ment problems.

**Use Holland Engineered
Truck and Trailer Equipment**

- FIFTH WHEELS
- PINTLE HOOKS
- LANDING GEAR
- COUPLERS



Super Overhaul

Continued from Page 172

bled it may be transferred to another stand of similar dimension but fitted with casters where it will receive final adjustments and checks before being fitted with shipping skids and placed in stock.

One of the reasons for the high mileage on our rebuilt engines is the extra care we give piston, connecting rod and ring assemblies. Connecting rods are carefully checked in a special fixture for alignment. Any that are out of line are restored to perfect alignment by a connecting rod bender located on the same bench.

Good Rings Are Vital

IT is our theory that if we can keep the top ring in an engine in operating condition to seal effectively against combustion pressures and gases, we have done the biggest job toward getting an engine that will deliver a 100,000-mile job before rebuilding.

Just recently an engineering report stated that engines did not wear out because of friction as commonly supposed, but because of acids in the oil and gasoline. As long as the top ring does a good job you'll never have trouble from burning oil. If you use too much oil with a good top ring you will find it has leaked out but has not been burned up in the combustion chamber.

We use a chrome ring in the top groove to assure maximum efficiency. When the top ring maintains compression and does a better job, all the rings below it also do a better job. To help maintain these ideal conditions which result in high mileage, rings must be accurately fitted into the ring groove so that they do not rock. Pistons which have rocked out grooves should be replaced. On new pistons we carefully examine the grooves for burrs and make sure each groove has sharp square corners.

We take particular care to fit each piston so that piston skirt has proper clearance. This eliminates starting an engine out with a slight rock in any piston.

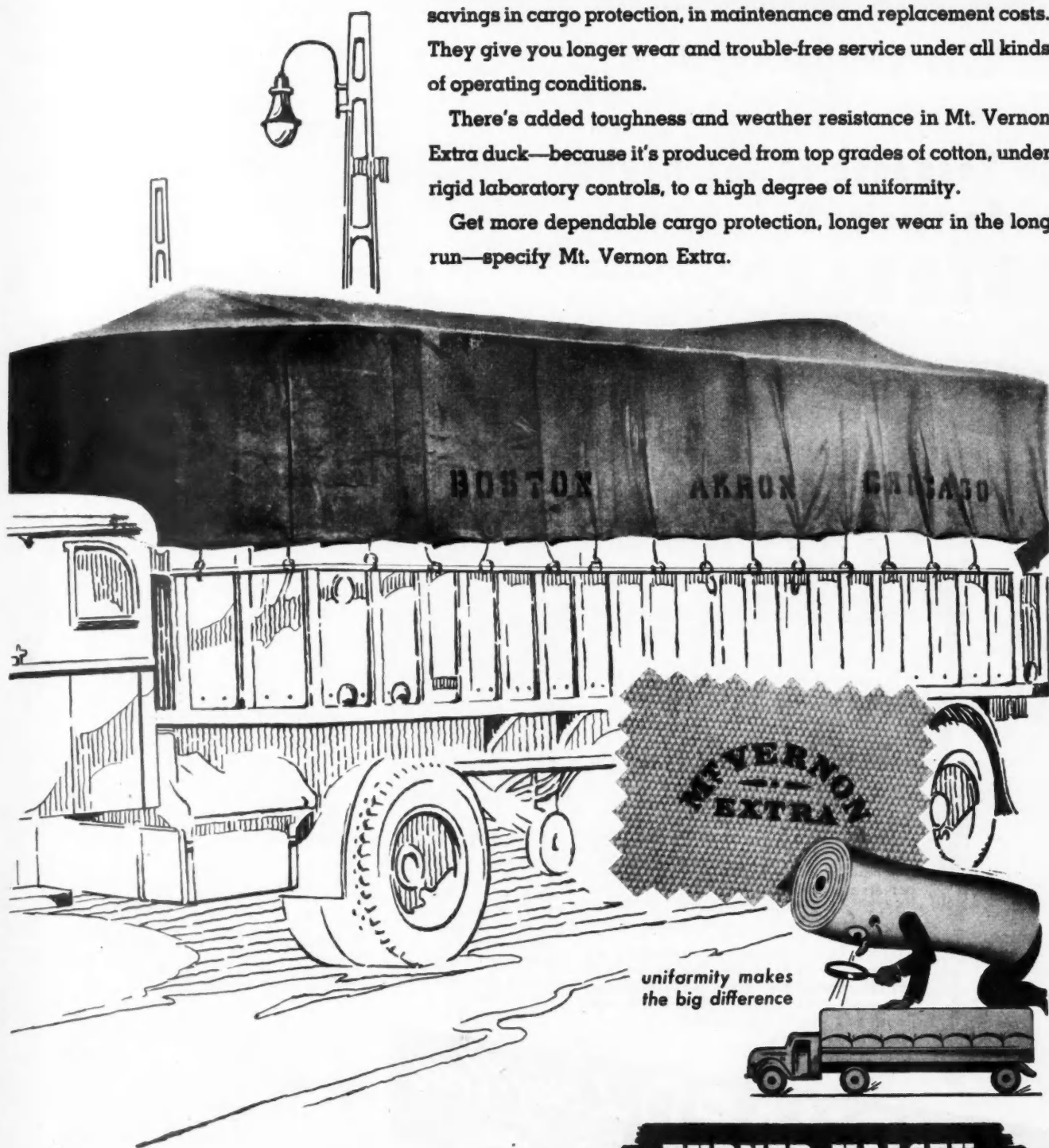
(TURN TO PAGE 176, PLEASE)

Covers That Help Cover Their Cost

Cargo covers made of Mt. Vernon Extra duck mean extra savings in cargo protection, in maintenance and replacement costs. They give you longer wear and trouble-free service under all kinds of operating conditions.

There's added toughness and weather resistance in Mt. Vernon Extra duck—because it's produced from top grades of cotton, under rigid laboratory controls, to a high degree of uniformity.

Get more dependable cargo protection, longer wear in the long run—specify Mt. Vernon Extra.



Mt. Vernon-Woodberry Mills

TURNER HALSEY

COMPANY

Selling in Agents

40 WORTH ST. • NEW YORK

Branch Offices: CHICAGO • ATLANTA • BALTIMORE • BOSTON • LOS ANGELES • AKRON

COMMERCIAL CAR JOURNAL, March, 1949



In addition to standard-type highway units, Watson Bros. equipment includes many "specials" such as this extra high rigger, adapted in the Watson shops

In Response to the Needs of Particular Body Builders

EBERHARD offers

5 NEW DEVELOPMENTS in TRUCKBODY HARDWARE

EBERHARD No. 5624
UNIVERSAL DOOR LOCK
(Made Expressly
for Heavy Duty Use)



WEB TYPE
LOCK HANDLE
No. 5621
For use on School Bus Emergency Door. 5/16" Sq. Shank. Horizontal or Vertical mounting. Finish, Plain or Cadmium.

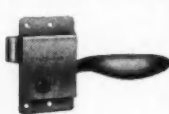


COMPARTMENT
LOCK No. 5605

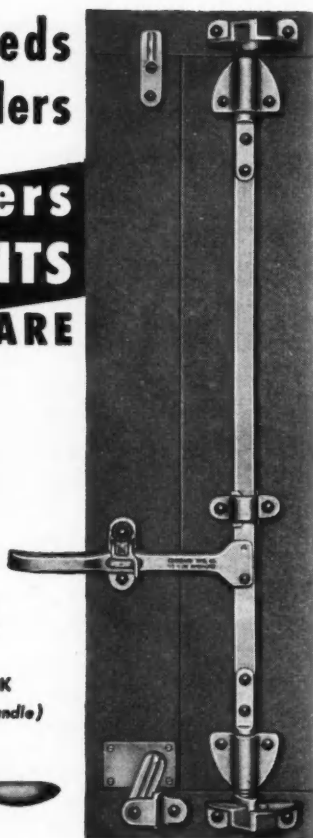


For use on Small Doors and Compartments. Attached by screws, rivets and welding. 5/16" Sq. hole. Lock case 3"x 1".

CAB LOCK
(with Spoon Handle)



Largely for inside door applications. Attached by screws, rivets or welding.



EVER-GRIP-HARD
Door Lock No. 5625

Rugged for Long Service under hard usage. Right or left, single or double doors. Frost seal breaking action.

(Left) The Universal door lock is the answer to your needs for large door applications. Designed and built for strength with smooth operation. Comes with 5/8" Sq. shank streamlined handle, as shown.

EBERHARD *Long Run*

TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co.

EVARTS AVENUE

CLEVELAND, OHIO



Super Overhaul

Continued from Page 174

Each Bearing Must Have Oil

WE have found that it is not enough to know that the oil pressure as shown by the dash gage is normal or nearly so on a rebuilt engine. Before the engine is operated it must be adjusted so that each bearing and each oil outlet is shooting oil at its proper pressure. An oil gage can show the proper pressure and yet connecting rod bearings may be slightly tight and main bearings loose and the pistons and rings may be getting less than their normal share of the oil.

One of the reasons why this is so important in rebuilding an engine that will run 200,000 miles, is that rings can be ruined in a few minutes. The next result in blow-by and blow-by gasses attack the bearings and we then have more wear on all these parts. An engine that does not have proper bearing clearances, true rods, properly adjusted main bearings and properly sized pistons, can ruin a ring job in an hour.

The correlation of all these parts is so important to the life of the engine that you cannot very well single out a single part of the engine to repair unless it is a positive fact that the other components are in exact adjustment.

Wear, as such, is a minor consideration in two or three hundred thousand miles if only ordinary precautions are taken. Air cleaners must be kept clean and in operating condition so they can remove dust and dirt from the air that is drawn in. Engines must be kept from sludging, oil must be changed when needed and filter cartridges replaced.

Of course valves, valve springs, guides, lifters and the fitting of valves and hydraulic valve lifters are highly important. Our experiences and practices with these items were discussed in a special article which appeared in the January issue of COMMERCIAL CAR JOURNAL, page 67.

END

(Please resume your reading on P. 80)

Get rid of Winter's Gum and Goo



Give each truck a—

CASITE TREATMENT

CASITE IN THE CRANKCASE • CASITE THROUGH THE AIR INTAKE

... in accordance with directions on container

Nothing ever gave you that "new truck" feeling—like a Casite Treatment. It releases that old-time zip and power . . . removes binding goo . . . relieves sticky valves and rings.

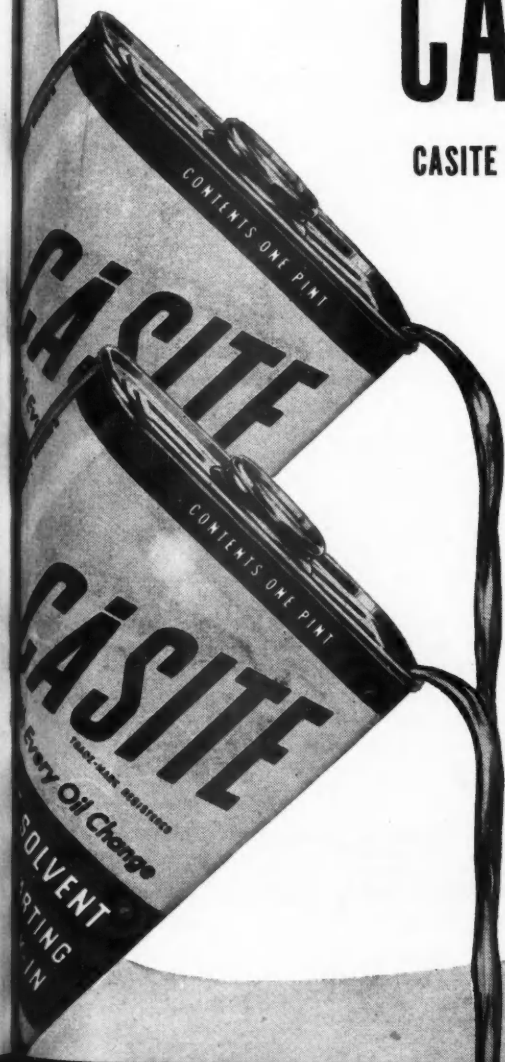
A Casite Treatment is simple and sure—takes only a few minutes. It cleans the engine, keeps it clean, slows formation of sludge and gum.


Casite gives extra protection, too—by speeding lubrication. When added to any motor oil, Casite gets it around quickly and into the tight spots, retarding wear, cutting repair bills.

Fleet owners and operators everywhere find the Casite Treatment the economical answer to better and smoother performance, longer engine life.

THE CASITE CORPORATION • HASTINGS, MICHIGAN

Get CASITE--and GO






FLAG
NEXT 1000 MILE INSP

DAILY MOTOR TRUCK OPERATING COST RECORD

For Month of Dec 1948

TRK 38



AT 89900

Driver: Joe Busch

OPERATING DATA											DAILY EXPENSE										Remarks	
Date	Miles	Speedometer Reading	Trips	Stops	Units		Weight		Time: Hrs. & Mins:			Gasoline	Oil-Grease	Misc. Tire Expense	Repairs				Misc. Expense			
					In	Out	In	Out	Route	Idle	Shop				Gals.	Cost	Parts	Labor		Parts		Labor
1	48	89753																				
2	50	89803																				
3	53	89853																				
4	56	89906																				
5	SUNDAY																					
6	51	89957																				
7	47	9004																				
8	48	90052																				

1000 mi Insp. OK

3 1/2

6

1

1.65

1.50

.80

Oil Cartidge

Points

15-Minute Cost System

Continued from Page 71

Thus, our general attitude was that such items were "peanuts," and that it was quite proper for us to be concerned about the "big" items—like getting more business. Nevertheless, we were a bit uneasy.

Our uneasy feeling about this weakness in our setup turned to actual concern when, not only gasoline costs, but lubricant costs, parts costs, and vehicle tie-ups increased as our fleet grew. From one source or another, we began to hear that some of our major repairs were traceable to the lack of proper PM which, in turn, was attributed to a lack of records, on the one hand, and to faulty parts or supplies, on the other. Both points were hard to prove. We could raise Cain with the mechanics but the parts and supply sellers asked for records to prove our claims.

As time went on, it became harder to get satisfactory explanations as to why our parts and supply bills were mounting, despite the fact that we were keeping a "sharper eye" on our operation. Still we could not bring ourselves to believe that it would pay us to establish a shop cost and maintenance control system.

Part-Time System Tried

ONE day, we got a big idea! Why not try some simple system that would take in only such items as were of

greatest importance to us, and that would require only a few minutes daily to operate!

The idea seemed worth trying, so we decided to work out the details. We looked around and picked up helpful suggestions from several sources. Our best help came from the truck manufacturers, who were glad to help.

Finally, we selected International's system because most of the forms seemed to suit our requirements. With this as a starter, we further simplified the procedure by eliminating some headings and changing others to get the information we desired.

The result is shown in the accompanying illustrations. Fig. 1 is a Driver's Daily Report, Fig. 2 is our 1000-mile PM Inspection form, and Fig. 3 is a Shop Work Order.

Fig. 4 is a page from International's fleet cost control system. It is a daily record of all cost items of interest to us for every vehicle in our fleet, and covers one month's operation. There are 12 such sheets in the convenient booklet that comprises the system.

(TURN TO PAGE 204, PLEASE)

		MONTHLY AND			
FIXED EXPENSES		Jan	Feb	Mar	Apr
Depreciation - Chassis - less tires					
Depreciation - Body	0.1434	16.67	17.75	17.77	17.75
Interest on Total Investment					
Insurance					
License		15.00	15.00	15.00	15.00
Taxes					
Storage					
Administrative Overhead					
Total Fixed Expenses		31.67	32.75	32.77	32.75
VARIABLE EXPENSES					
Total gasoline cost	2.29	24.96	31.56	27.17	26.99
Total oil and grease cost	1.18	1.73	1.67	2.06	1.73
Tires - Depreciation	0.025				
Tires - Misc. Expenses					
Repairs - Chassis - Parts		1.50	5.00	87.20	
Repairs - Chassis - Labor		4.50	4.50	5.25	5.25
Repairs - Body - Parts					
Repairs - Body - Labor					
Repairs - Accident - Parts					
Repairs - Accident - Labor					
Painting					
Washing ^{and} Greasing (Labor)		4.00	4.00	4.00	4.00
Truck Rental					
Miscellaneous Expenses					
Total Variable Expenses		35.69	43.66	39.35	40.00
Total Cost Less Wages		70.36	75.29	71.62	72.75
Driver's Wages					
Grand Total for Month					
STATISTICAL DATA					
Number Miles Operated		1156	1234	1208	1185
Number Days Operated		26	24	26	25
Number Hours in Shop		3	3	3	3
Gasoline Used (Gallons)		12.9	15.1	13.0	13.1
Average Miles per Gal. Gasoline		89	88	90	88
Average Total Cost Per Day		2.71	3.16	2.85	2.85
Average Total Cost Per Mile		.06	.06	.06	.06
Average Total Cost Per Hour					
Average Total Cost Per Stop					
Average Total Cost Per Unit (Tons, Packages, Gallons, Etc.)					

FIG. 6 Ordinary bookkeeper's columnar work sheets are used for this special analysis which breaks down data so that fuel consumption, for example, can be worked out on a mileage basis. Entire system is worked on part-time basis

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EVERY LOAD A

Greater Profit Load!

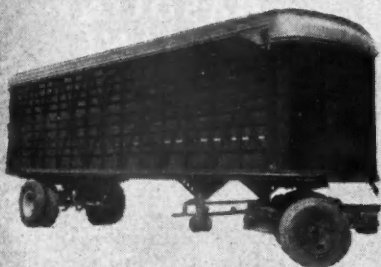


DORSEY

Fleet Chief

**Lighter Weight
+ More Strength = Maximum Payloads!**

ROUND TRIP PAYLOADS THE YEAR 'ROUND



The Fleet Chief Livestock Van gets the stock hauler a return load . . . Pressed Steel Double Deck Rail . . . Optional Rear Closures . . . Movable Partitions . . . Adjustable Ventilators . . . and **STRENGTH** for a maximum return payload.

Every pound of excess weight has been carefully engineered out of the Dorsey Fleet Chief Van to provide additional payload capacity. Greater payloads can be hauled with safety . . . the **STRENGTH** is still there.

Payload-to-weight ratio greater than 4 to 1 . . . more tons per mile . . . more profit.

NEW rear skirt and bumper . . . NEW ball bearing props . . . with the famous Dorsey suspension . . . every feature operators look for and need is here.

Stays on the road . . . with a full payload.

THE

Fleet Chief

BY

Dorsey Trailers
ELBA, ALABAMA, U.S.A.

**YOUR SPEEDOMETER
SHOWS
SPEED
and
MILEAGE**



**TELLS
THE
INSIDE
STORY**



A speedometer indicates speed and mileage traveled.

The needle of the Sun Electric Tachometer indicates when the engine is operating in the efficient and economical range.

It warns when to shift gears—when to speed up or slow down to avoid engine over-speeding or "lugging".

Factory calibrated models are available for all trucks and busses to assure the utmost fuel economy and longer, trouble-free engine life.

Write today for the complete story.



THE TRUCKSTELL COMPANY
Union Commerce Building
Cleveland 14, Ohio

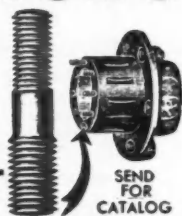
Manufactured by
SUN ELECTRIC CORPORATION, CHICAGO

**OVERSIZE AND STANDARD
REAR
WHEEL STUDS**

for all Trucks
ORDER FROM YOUR JOBBER



CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.



SEND
FOR
CATALOG

BETTER than Ever Before



Repower with
RAMCO
**10
up**
PISTON RINGS

... Cost System

Continued from Page 178

Fig. 5, also part of International's system, is the Yearly Cost Record, and contains a summary of the data on the 12 monthly sheets.

Fig. 6 is our own special analysis of how our fleet operation cost was distributed over the fleet. It groups a number of items that are of passing interest, but details others into small but important items—such as operating cost per mile per vehicle, and fuel consumption per mile per vehicle.

These records give us all the information we want to know about our operation. They have helped us locate the worst profit leaks, and have set us on the right track in our aim to keep costs down.

Now, our chief mechanic has available at his fingertips the actual day-to-day performance of all vehicles; not forgetting to mention an ever watchful eye on each driver and/or garage personnel maintaining the fleet.

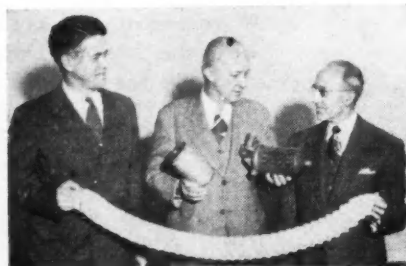
15-Minutes Per Day

THE best part of our system is that it only takes an average of 15 minutes a day to work it. A little extra time is required once a month to make a summary and make the few necessary entries on the Yearly Cost Record form, Fig. 4. An additional couple of hours is required to make the summary shown in Fig. 5, but the added time is insignificant when its value is considered. This information points a direct finger to specific, correctable causes of excessive truck operation costs.

For the benefit of those who may be skeptical that it takes only 15 minutes a day to work an efficient shop cost and maintenance control system for a

(TURN TO PAGE 206, PLEASE)

Surprising Filter



Resembling the familiar jack-in-the-box, AC Spark Plug Division's new plastic-treated filter has surprisingly large area. Holding it is Chief Engineer C. W. McKinley while Research Engineers Gretzinger and Lauer look on. It will be on some '49 cars



DEVILBISS

Spray-Painting Equipment • Spray Booths • Canopy Exhaust Systems • Exhaust Fans • Air Compressors • Hose and Hose Connections • Oil Guns

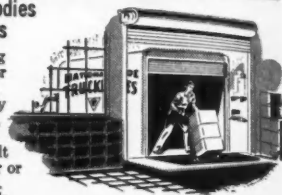
Distributors or factory sales and service representatives everywhere

THE DEVILBISS COMPANY
Toledo 1, Ohio

KINNEAR
STEEL ROLLING DOORS

For Truck Bodies and Buildings

Kinnear Rolling Doors save floor and wall space, open completely out of the way, and give extra protection. Built any size; motor or manual control. Write for details.



THE KINNEAR MFG. COMPANY
2100-20 Fields Ave. • Columbus 16, Ohio

YOU CAN DEPEND ON
MCCORD GASKETS
MOST CAR AND TRUCK
MAKERS DO

MCCORD CORPORATION
Detroit, Michigan

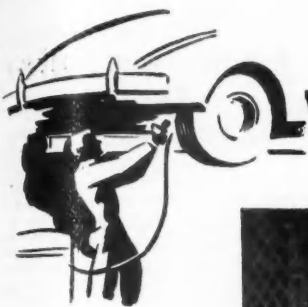
Gaskets • Radiators • Mufflers
Pipes and Oil Retainers

**WAUKESHA
ENGINES**

**DIESEL
GASOLINE
BUTANE**

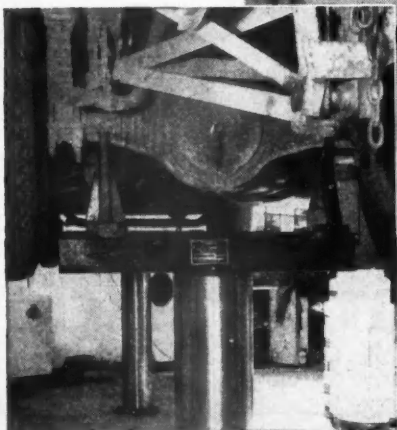
ALL LIQUID OR GASEOUS FUELS





WAYNE LIFTS BUILD PROFITS

Illustration below shows special Jack design for Offset Differentials.



Tailored TO FIT YOUR NEEDS

SINGLE OR MULTIPLE POST INSTALLATIONS

Wayne Hoists are tailored to your own requirements. A Wayne representative will discuss your needs with you, and Wayne Hoist Engineers will recommend the right equipment for you. There's no obligation.

WAYNE AUTOMOTIVE HOISTS are powerful, easily

handled, and convenient. They permit complete access to all under parts of car. Special multiple post arrangements and superstructure designs developed to suit your requirements and accommodate longest trucks. You can increase your lube business, simplify tire and repair work with Wayne Hoists.



THE WAYNE PUMP COMPANY
503 Tecumseh Street, Fort Wayne 4, Indiana

Please send ☐ Bulletin on Wayne ☐ Two Post, ☐ Single Post Hoists. ☐ Send Salesman.

NAME _____

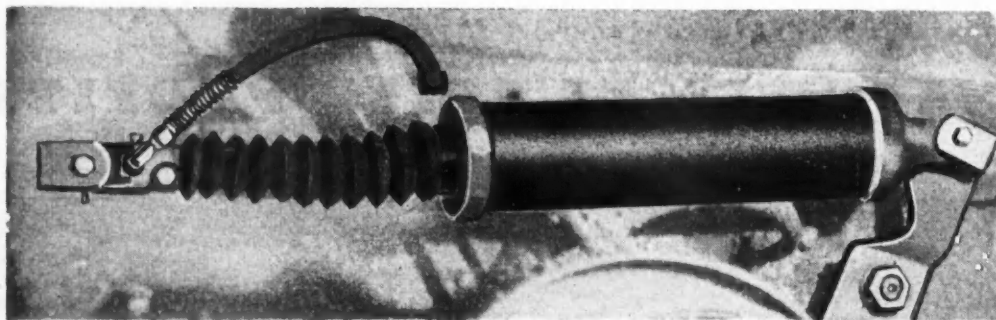
ADDRESS _____

CITY _____

STATE _____



AIR COMPRESSORS • HOSE REELS • CAR WASHERS • DISPENSING PUMPS

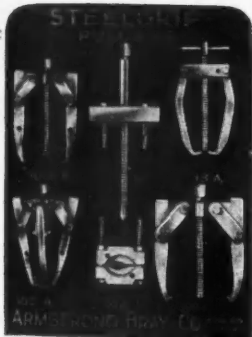


AIR-O-MATIC POWER STEER CORPORATION
2180 Lee Road Cleveland 18, Ohio

Easier and Safer TRUCK MANEUVERABILITY

A self-contained unit of extremely simple construction, yet exceptionally effective and precise in operation. No buttons or levers are required to operate the Air-O-Matic Power Steer—it works automatically, helping only as the operator of the vehicle leads the steering wheel in either direction. It automatically stops helping when the operator stops leading the steering wheel. Details and technical information available on request. Valuable territory open in the South and West. Write or wire for full details.

Pullers and Tool Rack



This permanent steel tool rack comes with these six most needed STEELGRIP PULLERS.

The sizes and types of STEELGRIP Gear, Wheel and Bearing Pullers most needed and wanted by garages and maintenance shops. Quickly and easily remove gears, wheels and bearings from shafts.

ARMSTRONG-BRAY & CO.
5320 NORTHWEST HIGHWAY CHICAGO, ILL.



U.S. Pat. No. 2,093,547 — Canadian Pat. No. 223,568
INTERNATIONAL CHAIN & MFG. COMPANY
YORK, PENNSYLVANIA

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

Monmouth
TRADE MARK
is the name

... Cost System

Continued from Page 204

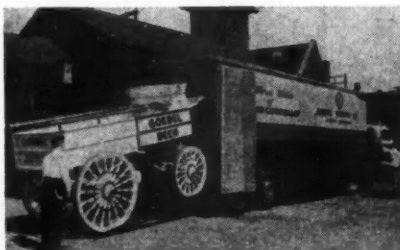
small fleet, we will describe our procedure.

Each morning, we take the Driver's Daily Report forms, Fig. 1, and transfer three items to the Daily Record, Fig. 3. the items are (1) daily mileage, (2) gas consumption, and (3) oil consumption, if any. Two other items are observed: If driver notes any mechanical trouble, and, if a PM check period is due. In the first case, the mechanical complaint is transferred to the Shop Work Order, Fig. 2; in the second case, the PM items are noted on the same form. It takes less time to make these notations than it does to explain them, especially because only a few or no shop work orders are required daily. It can be seen, therefore, that the records for all of our 38 vehicles can be made easily within the specified time.

As with all systems, to insure its success frequent spot checks of any part of the system are made by top-level of management; not just a cursory inspection but one with a genuine interest. Everyone concerned appreciates the "shot-in-the-arm" effect this gives. As usual, emphasis is directed toward the 1000-mile PM inspection and service

(TURN TO PAGE 208, PLEASE)

Traveling Beer Wagon



With its prize winning team of Clydesdales, this Goebel Brewery wagon is often in parades and expositions throughout the midwest. Between shows the rig rides in style in one of Goebel's specially-equipped Fruehaufs

CRESCENT

Wiry Joe

AUTOMOTIVE CABLE

Manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island



**CHECK THE WIRE
ON EVERY JOB**

BE SURE

the trademark "Timken" is on every tapered roller bearing you buy. Timken bearings are first choice with truck and trailer manufacturers. Remember—for the best in bearings—

IT'S "TIMKEN"

Trademark Reg. U. S. Pat. Off.
The Timken Roller Bearing Company
Canton 6, Ohio



who replace with

COLE-HERSEE

RESTORE ORIGINAL EQUIPMENT TO
THEIR TRUCKS, TRAILER AND BUSES

SEND FOR

COLE-HERSEE COMPANY

20 Old Colony Ave.—Boston 27, Mass.

HEAVY DUTY MOTOR TRUCKS AND

GASOLINE ELECTRIC GENERATING SETS

DUPLEX TRUCK COMPANY Lansing, Michigan

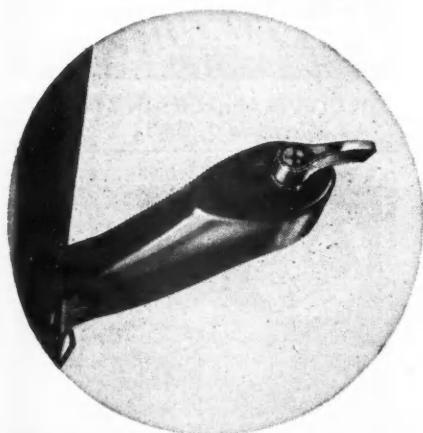
The Guide double-face unit (shown here), for front-fender mounting, is visible from both front and rear, signaling approaching as well as following vehicles. Single-face units, for either front or rear mounting, also are available. All units have visors, for improved visibility. A lens concentrates the light to make the flashing arrow visible, day or night.



POINTS THE WAY
TO SAFETY

GUIDE

NEW HEAVY-DUTY HIGH-QUALITY
DIRECTION SIGNAL



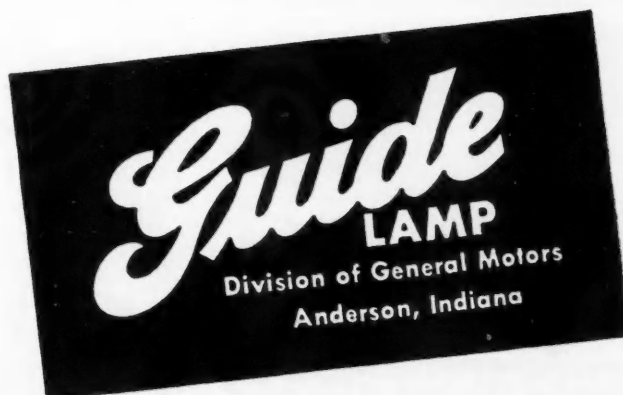
The direction-signal switch, in a heavy metal housing, is readily attached to any steering column, just below the wheel. The illuminated plastic switch lever blinks on and off while the signal is operating—a tell-tale to inform the driver that the lamps are flashing their friendly warning to other vehicles.

Designed specially for the requirements of truck use, this new direction signal is a sturdy heavy-duty unit built to give a long life of dependable service. Maximum durability and reliability are assured—both by Guide's skillful designing and manufacturing, and by Guide's policy of building to high standards rather than to a low cost. The new direction signal is, in short, a high-efficiency unit built of high-quality materials—yet its cost is little compared to its value in added safety.

It's risky to depend on hand and arm signals. But the flashing arrows of the Guide direction signal are *always* effective, day and night. For safety's sake—equip your trucks *now*.



GUIDE LAMP—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



RING GROOVE CLEANER

GEAR PULLERS

Cal-Van
MACHINE PRODUCTS INC.

WRITE FOR GENERAL CATALOG

809 WATER ST.,
JACKSON MICH. U.S.A.

GARAGE TOOLS



KEN-TOOL *Outstanding Quality!*
UNIVERSAL TRUCK WRENCHES

SUPERIOR QUALITY TOOLS,
HOT-FORGED FROM CHROME-
NICKEL ALLOY STEEL.

TR-1 "Job Designed" for
Ford, Budd and Dodge
wheels.

TR-2 "Job Designed" for
servicing Chevrolet Dual
wheels.

TR-3 "Job Designed" for
International, Federal,
Studebaker, Diamond T
and Mack wheels.

TR-4 Leverage bar with
socket for GMC, Reo and
Federal wheels.

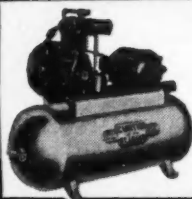
See Your Local Jobber
For Our Complete
Line!

Largest Exclusive
Manufacturers of Tire
and Wheel Equipment

The KEN-TOOL Mfg. Co. Akron 5, Ohio



Is it *Air* YOU WANT?



—then write for
BULLETIN C-6
illustrating and
describing

CURTIS AIR COM-
PRESSORS • AUTO
LIFTS • CAR WASHERS

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company
1970 Kienlen Avenue • St. Louis 20, Missouri

Gatke
CUSTOM-BILT
BRAKE LININGS

GATKE CORPORATION 248 N. La Salle
Chicago 1, Ill.



... Cost System

Continued from Page 206

section. This stresses the importance of proper inspection and servicing on time and every time a vehicle is due. Miss a few on any truck and watch the major repairs and tie-ups accumulate!

Space does not permit listing all of the important useful and potential data available in the system. The main point is that it is flexible. The complete foundation and structure is there for making any number of analyses. Last but not least, it can be dove-tailed into any system or routine of bookkeeping.

Needless to say, our attitude toward "paper work" has changed considerably—in fact reversed itself. The cost for the time required to keep the system going amounts to "peanuts." Keeping the fleet from eating itself up in excessive parts and supply costs, the reduced number of vehicle tie-ups, and the general increased efficiency is a "big item."

END

(Please resume your reading on P. 72)

Prospect!

Cute Young Thing: "How I wish I had a little house all my own, with a white picket fence —."

Freight Handler: "Yeah, that would be swell; then we could get married."

COVER 70% OF ALL
MAKES OF TRUCKS
AND BUSES ARE
Zollner EQUIPPED
ZOLLNER
HEAVY DUTY PISTONS



FRINK
SNO-PLOWS

Both "V" TYPE and
ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS

CARL H. FRINK, Mfr., CLAYTON, 1000 1st., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

CRACKED BLOCKS

BLOCKSAVER re-
pairs with a hard,
METALLIC filler
that fuses into pores
of cracks. Pour powder
directly into block
(not into radiator).

Safe to use. Anti-
freeze can be put in
right after treat-
ment. No draining
required. Will not
congeal upon con-
tact with anti-freeze.
No hot spots. Order
from your jobber or
write.

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MORE
PROTECTION!
MORE MILEAGE!

CLEVELAND CHAIN



THE CLEVELAND CHAIN & MFG. CO.
Cleveland 5, Ohio

GUMOUT CLEANS CARBURETORS •

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carburetors



Gumout cleans fuel system, keeps it clean! Improves engine performance. Eliminates moisture. Adds power. Use the year around with your gasoline.

PENNSYLVANIA REFINING CO.
2692 Lisbon Road, Cleveland 4, Ohio
Butler, Pa.—Edgewater, N. J.

GUMOUT CLEANS CARBURETORS •

HARD FACED VALVES
FOR

Longer Life - Lower Cost

Your valves or new valves built for
better performance and operation
economy.

EXHAUST - INTAKE - SODIUM
COOLED for GASOLINE and
DIESEL ENGINES

Cleveland Hard Facing, Inc.
2177 W. 28th Street
Cleveland 13, Ohio

NEWSCAST

Continued from Page 156

ICC EXTENDS EXEMPTIONS

The ICC has further extended until Dec. 31, 1949, the exemptions accorded private motor carriers of inflammable liquids in tank trucks which have been in effect since 1943 in connection with the application of Section 197.01 of Part 7 of the Motor Carrier Safety Regulations, Revised, covering the transportation of explosives and other dangerous articles.

GM PRICE CUTS

Price cuts in General Motors lines, as a result of recent wage reductions under the cost-of-living contract with the UAW-CIO, will be welcome news to fleetmen. Here are the figures received just as this issue went to press.

Chevrolet, all car and truck models: down \$10.

GMC Truck & Coach:

½-ton models, down \$100

¾-ton models, down \$105

1-ton models, down up to \$150 depending on wheelbase

1½-ton models, down \$105

2-ton conventional models, down \$105

2-ton c-o-e models, down \$115

Panels, down \$25 to \$50

Larger models, no reduction announced

Pontiac, all models, down \$15

Olds, down \$15 to \$20

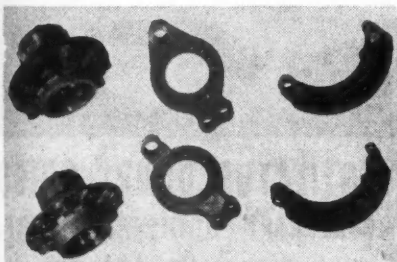
Buick, down \$16 to \$30

Cadillac, down \$25 to \$40

SCULLY AT N. Y. MEETING

Frank P. Scully, president of the Scully Signal Co., will demonstrate the safety and economy features of the "Vent-alarm" at the next meeting of the Society of Fleet Supervisors at the President Tavern, New York, March 16, 6:30 pm.

Light Brake Assembly



The Shuler Axle Co., Louisville, Ky., working with the Development Department of Dow Chemical Co., has come up with an 18,000-lb capacity trailer axle with a magnesium brake assembly and magnesium hub, which is so much lighter than a conventional steel assembly, or even than aluminum, that it is said to pay the operator a 100 per cent profit on his extra investment in the first year, and 200 per cent each year thereafter. The wheel hub, brake spider and brake shoe illustrated weigh considerably less than half as much as the conventional malleable iron ones in the bottom row.

COMMERCIAL CAR JOURNAL, March, 1949

FAMOUS EXAMPLES OF ARMORED CONSTRUCTION

1. U. S. ARMY "GENERAL PATTON" TANK



2. AMERICAN HEAVY DUTY UTILITY SNATCH BLOCK



9302

Dropped, slammed and battered on the job, blocks and sheaves have to be tough! *Armored Construction* makes AMERICAN Heavy Duty Utility Snatch Blocks serve better, last longer. Rigged quickly, too . . . just lift the hook and lay in the rope. In three sheave sizes, ten-ton capacity, handling up to ¾" wire rope. Sold by distributors everywhere. Made by AMERICAN HOIST AND DERRICK CO., St. Paul 1, Minn.

ALSO MAKERS OF THE
AMERICAN HANDWINCH
AND GENUINE CROSBY CLIPS

ASK FOR
**AMERICAN
BLOCKS AND
SHEAVES**

BURKE HEADS TANK GROUP

The National Truck Tank and Trailer Tank Institute at its annual membership meeting held February 8 and 9, 1949 at Chicago elected the following officers to serve during 1949: President, L. S. Burke, Boston Steel & Mfg. Co., Malden, Mass.; vice-president, H. D. Marshall, Eaton Metal Products Co., Omaha, Neb., treasurer, L. R. Wood, Niles Steel Tank Co., Niles, Mich. Allan R. Smith was reappointed executive secretary with headquarters at 120 South LaSalle St., Chicago 3.

RADIOACTIVE PISTON RINGS

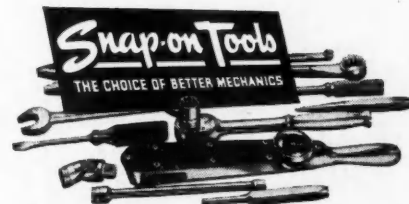
Experiments in the uranium chain-reacting pile at the Oak Ridge National Laboratory have proved successful in using radioactive piston rings to test the effect of fuels and lubricants on engine wear. "With radioactive rings in an engine," it was stated, "the amount of wear can be measured by an extremely simple method. In spite of the simplicity of the test, however, it is so delicate that as little as one millionth of an ounce of metal worn from the rings can be detected. "It is expected that in time operators of motorized equipment will realize the benefits of these experiments in the form of lower repair and maintenance costs on the engine as a result of the use of improved fuels and lubricants" it was stated.

(TURN TO NEXT PAGE, PLEASE)

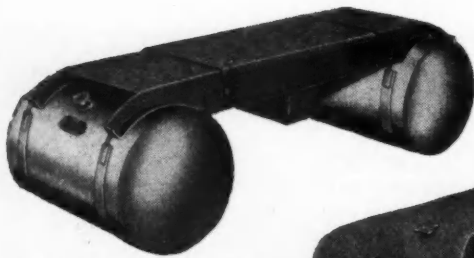
Classified Advertisements

SALES MANAGER WITH MECHANICAL BACKGROUND AND PROVEN ABILITY IN PROMOTIONAL SALES, PLANNING AND ADVERTISING AND WHO HAS SOLD HYDRAULIC HOISTS AND BODIES FOR TRUCKS AND EQUIPMENT USED FOR EARTH MOVING PURPOSES. GIVE FULL PARTICULARS IN FIRST LETTER. BOX 14, COMMERCIAL CAR JOURNAL, 5601 CHESTNUT ST., PHILADELPHIA 39, PA.

WILL ERECT 8 door terminal and warehouse for desirable tenant. Railroad trestle on premises. Property centrally located—4 blocks from Route #1. Area not congested. Rent reasonable. Calvert Oil Company, 2527 Baker Street, Baltimore 16, Maryland.



SNAP-ON TOOLS CORPORATION
8026-C 28th AVE. KENOSHA, WIS.



Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.



SNYDER SAFETY TANKS

A reflection of confidence in safety, dependability, and proven performance.

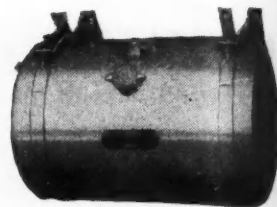
Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.

For Catalog and Name of Your Nearest Dealer, Write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, New York

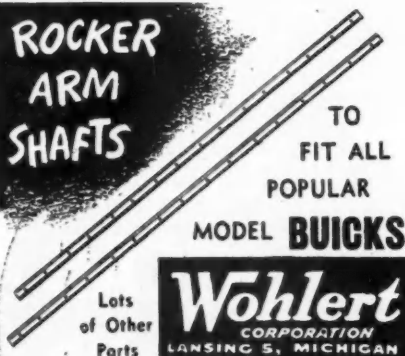
P. O. Box 2390, Birmingham 1, Ala.



Cylinder Tanks are used where space is limited. They are constructed for standard or end fill. Capacity of 28 to 72 gallons.



ROCKER ARM SHAFTS



TO FIT ALL POPULAR MODEL BUICKS

Wohlert CORPORATION
LANSING 5, MICHIGAN

GUNITE
PROCESSED IRON • MALLEABLE IRON
ELECTRIC STEEL
CASTINGS
GUNITE FOUNDRIES CORPORATION
ROCKFORD • ILLINOIS



SAFE!

Safety 5th Wheels are "honeys" for hard work. They're right, and really safe — built by 40 years of railroad coupler experience. Get Folder No. 102.

A-S-F Safety 5th WHEEL

Automotive Division, American Steel Foundries
400 N. Michigan Ave., Chicago 11, Ill.

SUPER-POWER

Center-Lift
HERCULES
Hydraulic Hoists
and Dump Bodies

HERCULES STEEL PRODUCTS CORP.
GALION, OHIO

NEWSCAST

Continued from Page 209

TOLL ROAD PROPOSALS

Legislation for study and construction of toll roads has been introduced in six states, a survey by the National Highway Users Conference reveals. A brief summary follows:

Colorado: One bill seeks to repeal 1947 law authorizing toll roads, while other bills have been introduced which would amend and possibly enlarge the existing authority.

Massachusetts: Legislation has been introduced to authorize study of the feasibility of a toll road from Connecticut to the New Hampshire state line with connections to Boston and to the west of the Connecticut River.

Michigan: A bill would provide for creation of a turnpike authority to construct and operate toll roads to be financed by issuance of revenue bonds.

Nebraska: A proposal would permit the State Highway Department to issue revenue bonds to build toll roads.

Ohio: Legislation has been introduced to amend the Ohio Constitution to remove a possible constitutional bar to construction of toll roads and to create a turnpike commission to construct and operate toll road projects to be financed by the issuance of revenue bonds. A similar bill was defeated in the last legislature.

Rhode Island: A bill proposes the creation of the "Southern Rhode Island Park Authority" to construct a "parkway" from Westerly on the Connecticut-Rhode Island border to Tiverton at the Massachusetts-Rhode Island border. The cost would be financed by the issuance of revenue bonds, which could not be sold below a price that would make the effective interest rate more than five per cent.

FULLER REVAMPS "BRASS"

The Fuller Mfg. Co., Kalamazoo, has named J. Seton Gray, president of the company since 1935 as chairman of the board. Succeeding Mr. Gray as president is E. L. Ludvigsen, formerly vice-president and general manager of the Transmission Division.

Harold E. Brey, formerly vice-president and general manager of the Unit Drop

(TURN TO PAGE 212, PLEASE)

Permalux
FINER DECALCOMANIA

FIRST IN { APPEARANCE
ECONOMY
DURABILITY

Made With DuPont "DULUX"
Write Today for details

THE PERMALUX COMPANY

500 Rathbone Ave. • Aurora, Ill.



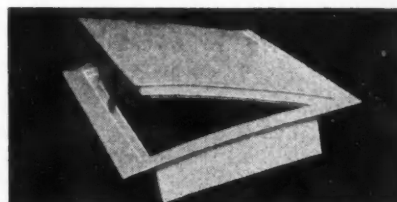
Pre-Insulated STEEL BUILDINGS

Prompt delivery complete in one package 24' and 40' clear span or any multiple. Any length, multiples of 8'.

GARAGES • WAREHOUSES

THE PIONEER COMPANY

Century Building • Pittsburgh 22, Pa.



VENTILATOR DOORS \$9.98

METALCRAFT ENGINEERING CORP.

Marietta, Ga., U.S.A.

PREFERRED
FOR
REPLACEMENT

SKF
BEARINGS



Handifast

BATTERY CHARGER AND TESTER

AVAILABLE NOW Immediate Shipment

FULL 80 AMP. RATE — HANDIFAST is not a booster; it charges at full 80 ampere rate. (Substantially charges battery in 30 min.)

TESTER — makes discharge test of battery.

DE-SULPHATER — Fully discharges battery to break down sulphation.

AUTOMATIC — Time switch automatically shuts off charge.

SIMPLE TO OPERATE — plugs into any 115-volt A.C. line.

COMPACT — HANDIFAST is a compact, light-weight, portable Charger (weighs less than a battery)—yet it has the same utility as larger, higher-priced Fast Chargers.



\$95.00

COMPLETE AS SHOWN

WRITE for Bulletin 331

BALDOR ELECTRIC CO., 4340 Duncan Ave., ST. LOUIS 10, MO.

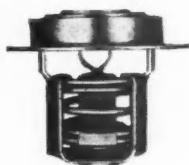
FOR BETTER PERFORMANCE . . .

Replace Worn Thermostats

with **DOLE** Replacement Thermostats

— IN A RANGE OF TYPES FOR EVERY CAR

The New DV
for Today's High
Efficiency Cars and Trucks



• It's new, different, modern. Designed to control high pump pressure . . . and for use with pressure caps in sealed cooling systems. Positive-acting thermal unit assures amazing results in economy and performance.

The All-Season ADJUSTABLE
for Many Makes and Models



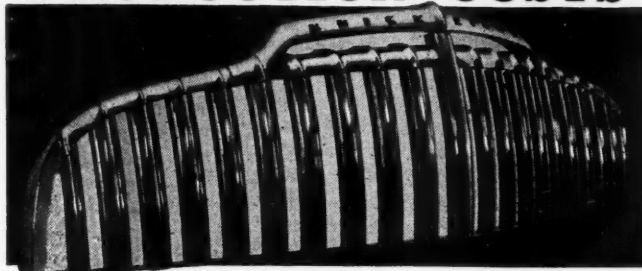
• Dole adjustable thermostats improve motor performance by accurate temperature control for every season and type of anti-freeze. You get quick warm-up, reduced crank case dilution, less engine wear—plus savings in gas and oil.

CONTROL WITH DOLE

THE DOLE VALVE COMPANY
1901-1941 Carroll Avenue • Chicago 12, Illinois
Representatives in Principal Cities

COMMERCIAL CAR JOURNAL, March, 1949

Cut your Grille PRODUCTION COSTS



with GREENE MOULDING ASSEMBLIES

If your present grille design calls for plated castings or one-piece stampings, check the savings Greene UNI-FORM® Moulding Assemblies can make for you. Made by the economical Greene process of assembling low-cost mouldings and stampings you'll find UNI-FORM Moulding Assemblies give you

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Our grille experience, gained from working with the country's leading automotive manufacturers is at your service. Please send us details, blue prints and quantities required. No obligation on quotations, of course.

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ASK FOR IT!

Free Catalog of moulding shapes



Greene Manufacturing Company Inc.

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RACINE, WISCONSIN

KENTUCKY TRAILERS



KENTUCKY'S
Load-Spreading
ASSEMBLY



guards against concentrated load by distributing the floor load equally into the carrying side structures. The stability thus developed provides the smoothest pulling under any road conditions—keeps suspension in line—Keeps body in line—because the pull is directly through the Load-Spreading assembly.

The man who knows will buy
only a KENTUCKY TRAILER

Correspondence invited—illustrated folders available.

KENTUCKY MANUFACTURING COMPANY

R. C. TWAY COMPANY, Incorporated, OWNER
2601 South THIRD Street, Louisville, 8, Ky.

Since 1879

NEWSCAST

Continued from Page 110

Forge Division, was named executive vice-president. While two new vice-presidents were named, William E. Ninness as vice-president in charge of sales, and Thomas Backus as vice-president in charge of engineering. Eric A. Pullan remains as secretary and treasurer of the company.

Frank C. McManus, formerly factory manager at Kalamazoo, has been named manager of the Transmission Division, and E. L. Block was appointed manager of the Unit Drop Forge Division.

BODY GROUP CHANGES NAME

The name of the National Truck Body Manufacturers Association has been changed to include distributors of truck bodies and equipment in full membership in the Association and will henceforth be known as the "National Truck Body Manufacturers and Distributors Association."

The office of the Association will continue to be at 1222 Dupont Circle Building, Washington, D. C.

HOMETOWN NOTES

Atlanta, Ga.: Automotive Warehouse & Dist., Inc., 734 W. Peachtree St., will serve as southeastern warehouse for Guaranteed Parts Co., Inc.

Boston: Samuel S. Press and Associates will handle sales for The U. S. Axle Co.

Cincinnati: A new Black & Decker factory service station has opened at 1094 Gilbert Ave.

Cleveland: A. W. Hoffman Sales Co. has been named sales representative for the U. S. Axle Co.

Denver: The Black & Decker service station has moved to new quarters at 1010 Bannock St.

Detroit: B.C.D. Equipment Co. at 7422 Woodward Ave. will distribute school bus bodies for The Hick Body Co., Inc., of Lebanon, Ind.

El Paso: Stewart Warner Corp. has organized the Alemite Co. of West Texas to handle instruments and heaters in that area.

Portland, Ore.: International Harvester has opened a new truck sales and service headquarters at 635 N. E. Second Ave.

Richmond: Brown-Clark Equipment Co., Inc., will distribute Brown aluminum trailers in Virginia and the Carolinas.

Utica, N. Y.: The Kinne-Equipment, 416 Broad St., has been appointed distributor of White trucks and school busses for Utica and Oneida County.

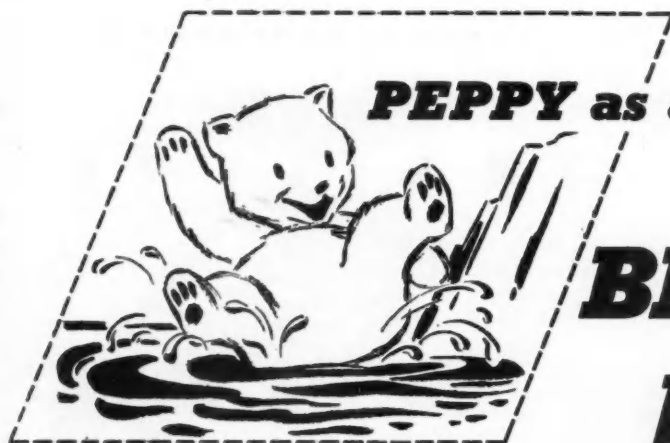
Big Job For Chile



Built for copper mining in Chile, this Sterling dump truck features a 17-cu yd body, a 275 hp supercharged diesel engine, power-assisted steering and dual chain drive. Payload capacity is about 22 tons.

RAIL HIKES BOOST TRUCK TRAFFIC

Threats of further large-scale switches to truck transport if the railroads continue to hike freight rates highlighted recent sessions on changes in rail freight classifications held at the Pacific Freight Tariff Bureau in San Francisco. Representatives of large groups of related shippers told the committee steps already were being taken by many companies to realign their shipping facilities to make the switch from rail to trucks, and that this program would continue on an increasing scale if the railroads did not call a halt to the upward trend in freight rates.



PEPPY as a polar bear in a freeze

BLUE STREAK
battery cable

CUT WINTER DOWN-TIME:

This cable takes to winter driving like a polar bear on a 'berg; carries the juice even when the mercury's way down below freezing.

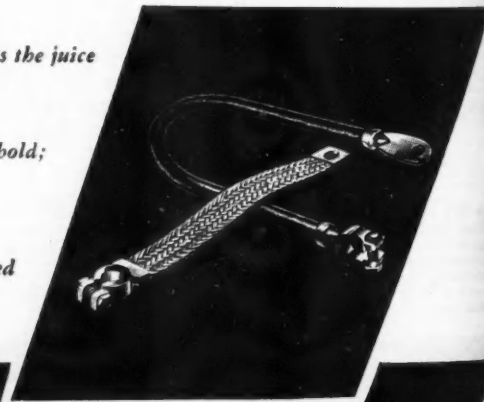
HEAVY DEFENSE:

Blue Streak's exclusive new lug grips insulation in real bear-bug hold; insures perfect contact and flawless connection.

NO FUMBLES:

Your maintenance crew will appreciate Blue Streak battery cable. The raised bolt on the terminal allows more working room—makes a tough job easier.

Write us or see your jobber for catalog details



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